Industrial FINISHING

got a
finishing problem?
send it to

Advance PAINT COMPANY

TO GIVE YOUR PRODUCT A GOOD START, GIVE IT AN INTERCHEMICAL FINISH!

Undercoats . . . Varnishes . . . Lacquers . . .
Enamels for Metal . . . Plastic . . . Wood

AULT & WIBORG, MURPHY, ROXALIN, AND IC ARE TRADEMARKS OF INTERCHEMICAL CORPORATION

plating rejects caused by incomplete cleaning

my face was covered . . .

with heavy drawing compound and solid dirt. Alkali cleaning proved ineffective. Rejects ran high. Costs doubled.

10 seconds' soak . . .

in Emulsion Cleaner 75 followed by 15 seconds in alkali cleaner eliminates rejects due to faulty cleaning.

Enthone Emulsion Cleaner-75

1 removes stubborn oil, grease and grime almost instantly

2 insures smoother, brighter, more adherent electrodeposits

3 tapped holes, slots, embossments, corners, crevices, sculptured patterns, emerge completely clean

4 ideal for cleaning work before any phosphate treatment to avoid coarse coatings

Write for literature and operating instructions

Enthone Inc

442 Elm Street, New Haven, Conn.

Special "Ancestral" Finish for Highlands Group by Park

The Ancestral finish shown on this Solid Cherry Highlands group by Park has resulted in brilliant sales all over the country. The emphasis on wild cherry grain, along with subtile distressing, portrays a quaintness never before attained. This special finish was created in our modern studios. Our experienced finish experts saw to it that the new finish not only matched the manufacturer's specifications, but worked out practically and economically in production as well. The outstanding sales appeal of this Park group is proof of the advantages of a superior finish.

The Better the Finish,
the Better the Buy

For further information regarding our studio facilities and services, please write to

GRAND RAPIDS VARNISH CORPORATION
GRAND RAPIDS, MICHIGAN
Makers of the Famous Guardsman Finish
and Guardsman Cleaning Polish

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the 18th of each month by
PRACTICAL PUBLICATIONS
Incorporated
1142 N. Meridian St.
Indianapolis 4, Ind.
Telephone Riley 6771

Industrial FINISHING

W. H. ROHR, Editor P. C. BARDIN, Associate Editor

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Acceptance under Section 34.64, P. L. & R., authorized

OCTOBER, 1950
Vol. XXVI, No. 12

ECA

Distributed monthly to finishing room and paint shop foremen, production superintendents, chemists, purchasing agents and company executives of industrial plants where production cleaning and finishing are major operations in the manufacture of parts and products.

★

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26 TWENTY-SIXTH YEAR OF PUBLICATION

TV in Color. First public demonstration of "Vericolor", the new color television system developed by Columbia Broadcasting System and Remington Rand Inc., for commercial and industrial use, will be a feature of the National Business Show at the Grand Central Palace, New York, during the week of October 23.

The "Mid-Century Mark of Progress" will present the color TV demonstration in a series of 15-minute shows on the main floor of the Palace, starting at half-hour intervals during each day of the Show. The new color television unit is to be manufactured and distributed by Remington Rand.

* * *

Glycerin Substitute. The scarcity of glycerin has inconvenienced many manufacturers. Glycerin may be replaced in many cases by a synthetic product Aquaresin (Glycol Bori-Borate) which is being produced on a tonnage basis by Glyco Products Co., Brooklyn, N.Y. and Natrium, W. Va.

* * *

Versatile Adhesive. "Resiment", introduced four years ago by Paisley Products, Inc., as a paper-to-metal labeling adhesive, has now become an extremely useful adhesive for a wide variety of bonding operations, according to the manufacturer. It is reported to be suitable for many combining and laminating operations on similar and dis-similar materials, such as cork to metal, felt to cardboard, paper to glass, fabrics to metal; also it holds to many plastics. In addition to its original use for fastening instruction labels, circuit diagrams, brand labels, etc., to electrolytic tin plate, terne plate and other metal surfaces, it also holds effectively to varnish, painted and enameled surfaces.

* * *

Prevents Mildew. An aerosol preparation of a powerful agent for preventing mildewing has been developed for household use.

The product is being distributed under the trade name "Formula J" by the J. W. Johnson Co. of Bellwood, Ill. Two types are available, one for fabrics and one for leathers. The chemical kills common molds that cause decay and stain. It is emitted from the container in a fine spray when pressure is released, and is not considered toxic to human beings. It is effective in preventing mildewing of clothing, leather goods and fabrics stored in damp places or used in humid climates.

Industrial formulations of the chemical, marketed as "Cunilates", have been designed to factory-treat a range of products, including canvas, cordage, paper, plastics and surface coatings.

* * *

Floor Finish. Following a series of field tests, the Johnson Wax Company has introduced a new self-polishing, slip-retardant floor finish known as

Dolan's 35% HI-SOLIDS LACQUER

. . . sprays right from the drum: requires no thinning or heating. 35% solids in a single application.

OUTSTANDING!!

. . . Because it can be sprayed without the addition of thinners or the necessity of pre-heating to bring down to spraying viscosity, Dolan's 35% Hi-Solids Lacquer gives an improved finish at greatly reduced cost. It is unusually tough, with exceptional cold check resistance. Very light in color. Fits into any finishing schedule. A demonstration will prove convincing.

"From the start consider the Finish"

V. J. DOLAN & COMPANY, Inc.

Manufacturers of *"Unquestionable Quality"*

INDUSTRIAL FINISHES

1830 N. Laramie Ave. Chicago 39, Ill.

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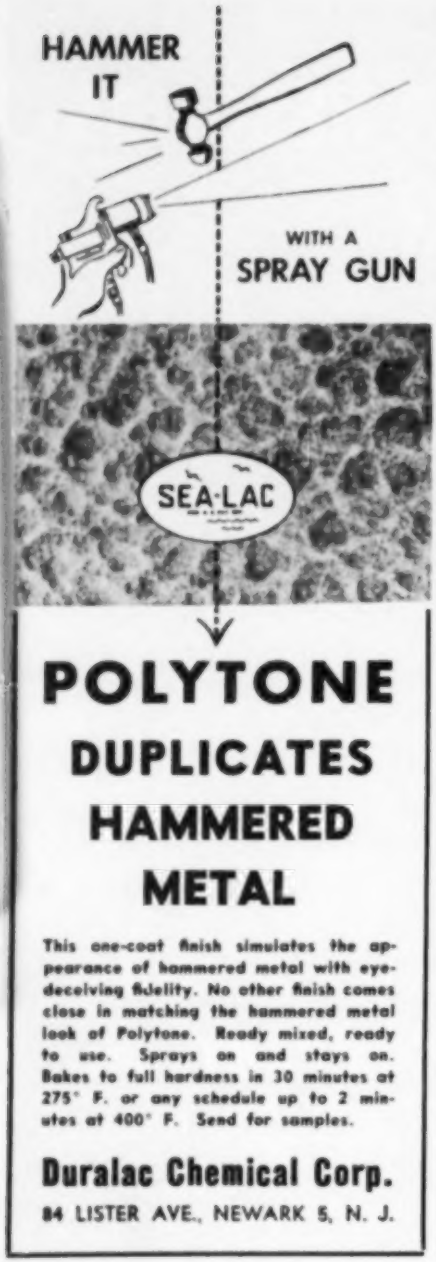

HAMMER IT
WITH A SPRAY GUN
SEA-LAC
POLYTONE
DUPLICATES HAMMERED METAL
This one-coat finish simulates the appearance of hammered metal with eye-deceiving fidelity. No other finish comes close in matching the hammered metal look of Polytone. Ready mixed, ready to use. Sprays on and stays on. Bakes to full hardness in 30 minutes at 275° F. or any schedule up to 2 minutes at 400° F. Send for samples.
Duralac Chemical Corp.
84 LISTER AVE., NEWARK 5, N. J.

"Shur-Tred." It gives beauty, protection and ease of maintenance; and provides a slip-retardant surface needed in special cases where a slip hazard exists. It does not leave a greasy film on the floor.

* * *

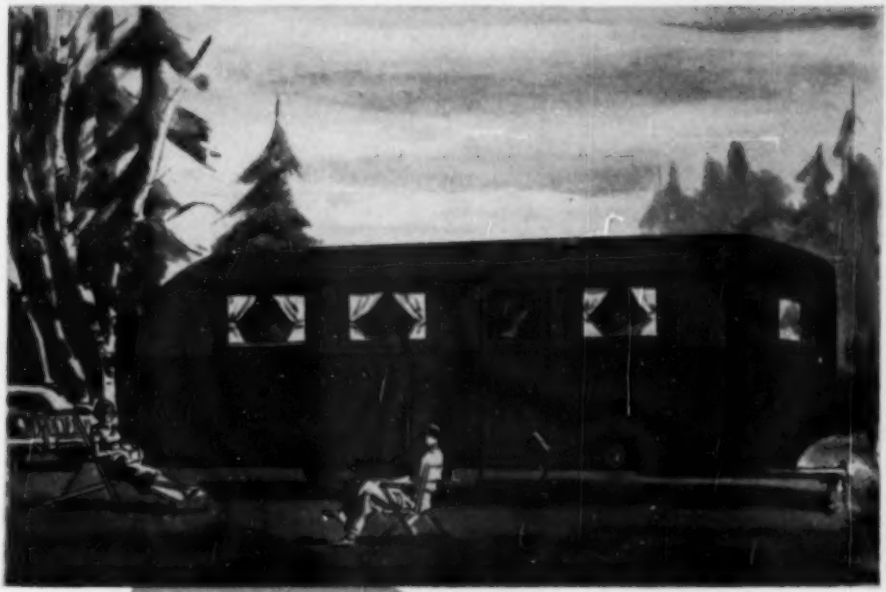
Non-Decay Wood. Monsanto Chemical Co. has registered a brand to identify construction lumber and other wood items preserved against decay and insects with Monsanto's penta.

The brand, "MP" for maximum protection, will be licensed to plants qualified to treat by the vacuum-pressure process in accordance with specifications being established by the company. The identifying mark, a pentagon containing penta content and other information, is to be indelibly stamped onto each piece meeting specifications.

* * *

"Miracle Lubricant." The new "oil made of metal" introduced six months ago by the Lubricants Division of The Lockrey Co., College Point, N. Y., has opened up so many new possibilities in machine design by providing safe lubrication at higher speeds, pressures and temperatures than ever before possible, that the company has been forced to develop several new forms of this molybdenum-base lubricant to meet especially severe conditions. Their Technical Bulletin No. 21-E just published describes four new types.

Liqui-Moly is a specially-treated compound of the extremely "greasy" metal molybdenum, which has the peculiar property of attaching itself by molecular attraction to metal bearing surfaces, forming a lubricating film that cannot be "squeezed out" by any amount of pressure, and which can withstand unbelievable extremes of temperature without affecting its lubricating qualities.



house trailers

A good house trailer paint like a fine house paint must hold up under all extremes in weather, but—the trailer moving from place to place with constant vibration and body strain presents the extra problem of flexibility.

Tousey has solved this problem for leading trailer manufacturers and in addition make the finishes that are used in the interior, producing beauty and smartness.

If you have a finishing problem—write Tousey today for helpful information.

TOUSEY PRODUCTS
DURACOTE for DURABILITY

TOUSEY FINISHES CAN TAKE IT!

Read "65 Years of Achievement"—the story behind the Tousey Varnish Co.—it's yours for the asking.

TOUSEY VARNISH CO.

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STOP RUST AND CORROSION

with

PHOSCOTE

- A new type phosphating cleaner that cleans and phosphates in a single operation.
- Prevents under film rust and corrosion, adds life to the finished item.
- Produces a fine, evenly dispersed phosphate coating on the metal surface for greater paint adherence.
- Is a non-toxic, non-corrosive powder, does not sludge out in the operating tank.
- Phoscote is economical to use on both steel and aluminum due to low using concentration and ease of application.

Further information supplied upon request.

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I. C. D. FORMULA NINE

NON-INFLAMMABLE « *wax free* REMOVER »

for paint, varnish, lacquer, baked enamel, adhesives

EASY TO APPLY—NO AFTER CLEANING

I. C. D. FORMULA 9 is the standard of safety and quality . . can be sprayed or brushed . . doesn't raise grain nor discolor . . quickly removes all kinds of finishes and coatings from any surface or material . . costs less to use . . saves time, labor and material.

BRUSH CLEANER I. C. D. — non-inflammable brush cleaner works fast . . does not injure nor loosen the bristles. Easy to use . . leaves the bristles clean as a whistle. Order a gallon can and convince yourself.

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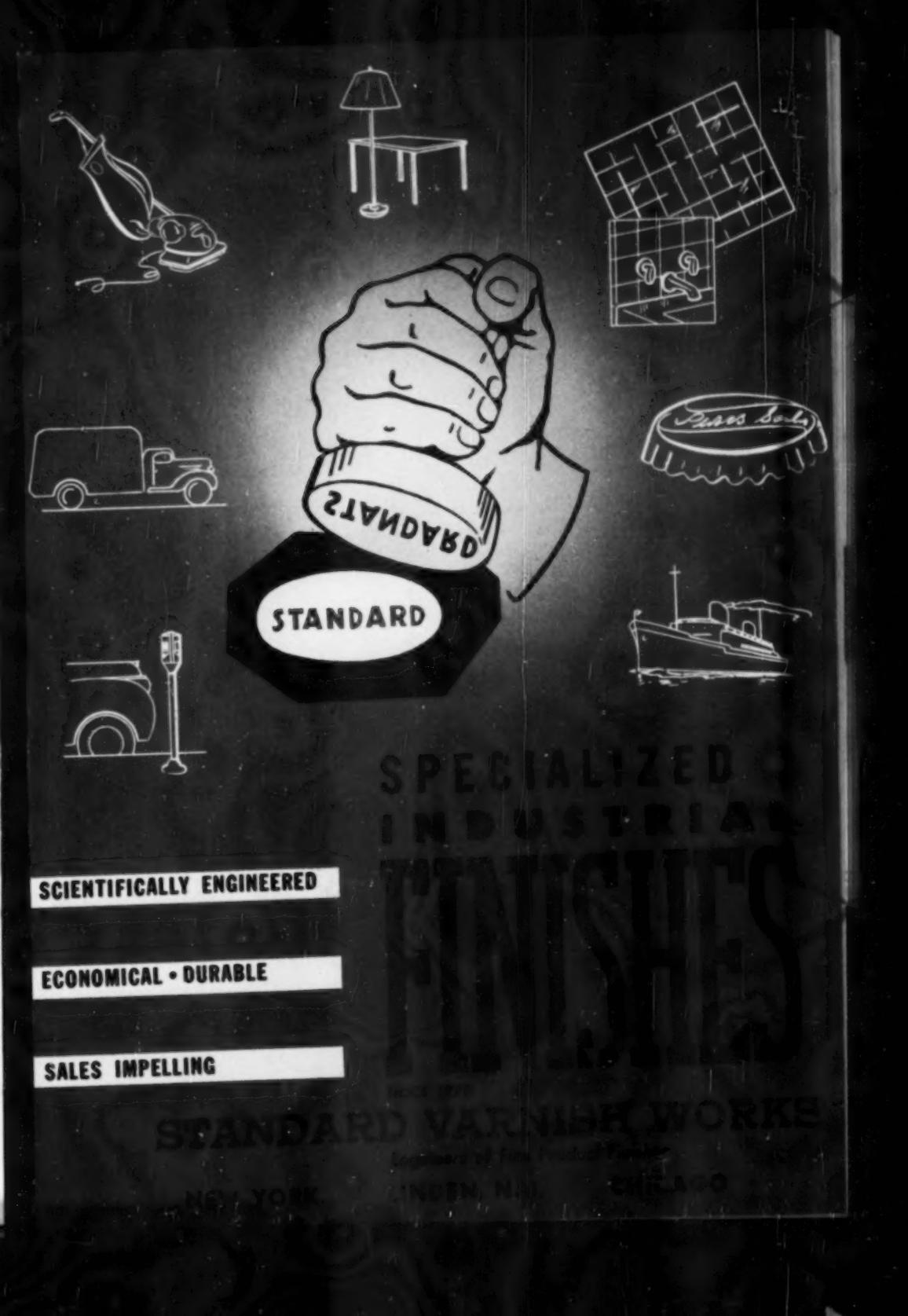
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SCIENTIFICALLY ENGINEERED
ECONOMICAL • DURABLE
SALES IMPELLING
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FINISHES
STANDARD VARNISH WORKS
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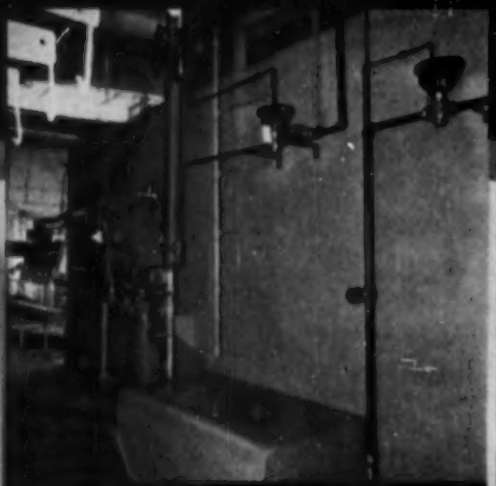
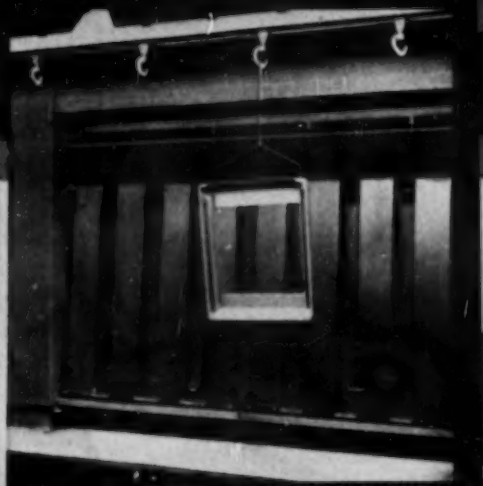
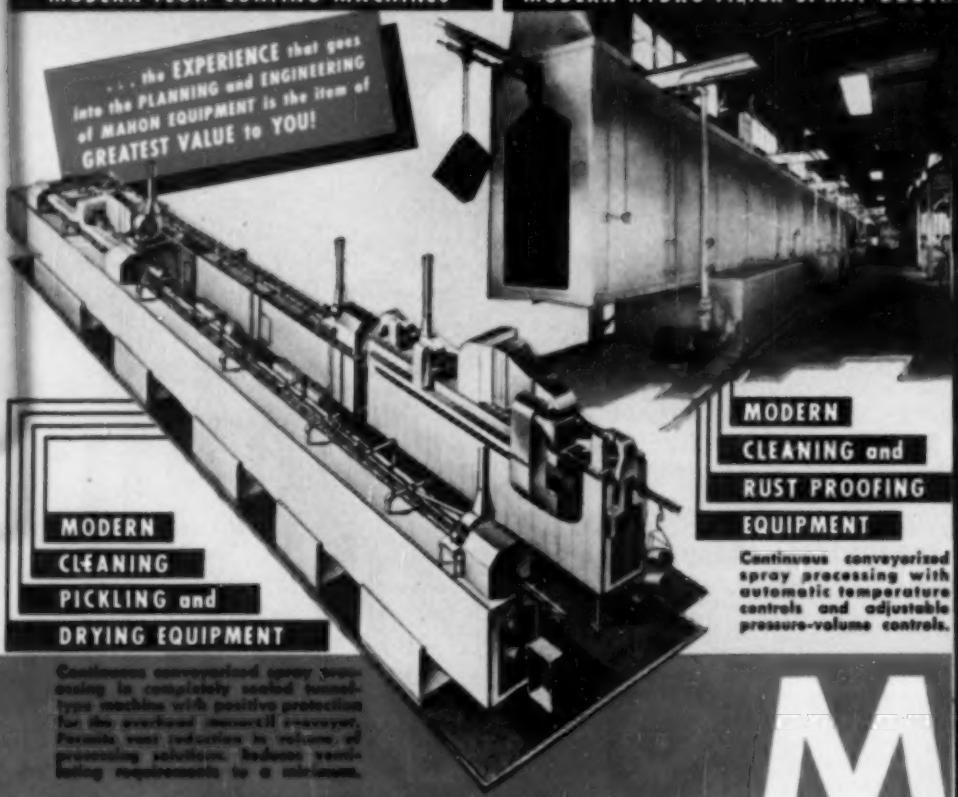


MODERN FLOW COATING MACHINES



MODERN HYDRO-FILTER SPRAY BOOTH

. . . the EXPERIENCE that goes into the PLANNING and ENGINEERING of MAHON EQUIPMENT is the item of GREATEST VALUE to YOU!



MODERN
CLEANING
PICKLING and
DRYING EQUIPMENT

Continuous conveyorized spray processing in completely sealed tunnel-type machine with positive protection for the overhead monorail conveyor. Permits vast reduction in volume of processing solutions. Reduces ventilating requirements to a minimum.

MODERN
CLEANING and
RUST PROOFING
EQUIPMENT

Continuous conveyorized spray processing with automatic temperature controls and adjustable pressure-volume controls.

M

Finishing SYSTEMS

. . . for ENAMELS • LACQUER • PAINT • VARNISH

MAHON SELF-HOUSED FINISHING SYSTEMS installed on roof or adjacent to plant

Modern Equipment Reduces Finishing Costs . . . Provides Better Working Conditions . . . Produces Finer, More Durable Finish!

Modern technique in the processing of metal surfaces and the application of modern finishes requires modern equipment with positive control of each operation. Mahon Self-Housed Finishing Systems permit the freedom in planning essential to highly efficient equipment of this type. All restrictions imposed by plant layout are eliminated . . . hence, no compromises are engineered into these finishing systems . . . proper coordination and precise control of each phase of the finishing process is assured. No matter what your product may be, the Mahon organization is prepared to produce a complete finishing system that will save you money, provide better working conditions, and improve the quality of the finish on your product. If you are contemplating new equipment, remember that the Mahon organization has pioneered development of this highly specialized field for over thirty years . . . broad experience in every industry where finishing constitutes a major production operation, plus constant research and experimentation, has endowed Mahon engineers with a wealth of technical knowledge and practical know-how not available to you elsewhere. See Mahon's Insert in Sweet's Mechanical Industries File, or write for Catalog A-649.

THE R. C. MAHON COMPANY

HOME OFFICE and PLANT, Detroit 11, Mich. • WESTERN SALES DIVISION, Chicago 4, Ill.

Engineers and Manufacturers of Complete Finishing Systems—including Pickling Equipment, Metal Cleaning and Rust Proofing Equipment, Dry-Off Ovens, Hydro-Filter Spray Booths, Filtered Air Supply Systems, and Drying and Baking Ovens. Also Core Ovens, Hydro-Foam Dust Collectors, and many other Units of Special Production Equipment.

AHON

There's one

Recognize him? Of course! He's the chap who spends so much time and effort hunting for a really solid way to save that he never gets around to trying out any one of 'em . . .

And that, you'll agree, comes under the head of "wasted effort." Because, with regular Payroll Savings available where you work, who could ask for anything more?

Payroll Savings is AUTOMATIC. Sign up—and sit back. It's as easy as that!

It's also "wasted effort" to try a multitude of different makes of finishes for, like Payroll Savings, the Lilly Key is "automatic" in supplying the right finish for your product. We have been making specific finishes for specific products and purposes for so many years that we can't miss. Yes, just like P. S., it's as easy as that and you don't even have to sign up—just contact one of the three Lilly plants nearest you.

"WITH THE RIGHT FINISH—YOU'LL FINISH RIGHT"

THE Lilly FINISHES COMPANY

High Point, N. C.

in every town

THE Lilly FINISHES VARNISH COMPANY

Indianapolis, Indiana

Gardner, Mass.

Freeze Molecules with Heat?

That's exactly what happens to baking DURANITES in your curing ovens! At just the right temperature, the heat "freezes" the molecules of the newly applied enamel—good looks and resistance to wear are literally baked in to stay.

Finish, the last thing you put on a product, is the first to catch the customer's eye . . . an integral part of design. So it pays you to consider finishing materials and procedures at the very outset of product planning.

DURANITES are a family of tough, high-gloss baking enamels developed by Zapon specifically for manufacturers of household appliances, electrical apparatus, lighting fixtures, hardware, and the like. So that it will fit your job, each DURANITE enamel has passed a gamut of tests against deteriorating media such as fats, alkalis, and acids . . . and from humidity to ultra-violet light. When you remove a DURANITE-coated product from your curing oven, you can be sure the finish is *on to stay*.

For ZAPON *Service From Every Angle* that tackles your finishing problems right on your own production line, write, wire, or phone.

Service from every angle . . .

that's ZAPON

REG. U.S. PAT. OFF.

ATLAS POWDER COMPANY

Industrial Finishes

Stamford, Conn. · North Chicago, Ill.

DURANITE—Trademark

The control of work flow through various stages of production is a vital cost factor in the processing or finishing of any product. The "right" type of conveyor correctly designed, constructed and coordinated to facilitate other plant operations can be a dividend paying investment.

Such an installation is the Jensen Overhead Conveyor shown above, which permits the continuous conveying, dipping and baking of painted parts in a Jensen Overhead Electric Radiant Heat Oven.

Whether your conveying requirements call for wire mesh, loop around, straight line, stainless steel, canvas or rubberized belting makes no difference— *Jensen makes them all.* Skillful engineering keeps material handling costs at "rock bottom" —insures dependable peak performance.

Jensen specializes in fully coordinated finishing systems incorporating planned conveying. Write today for descriptive literature. Better yet, call in a Jensen representative to look over your operation and submit recommendations.

Jensen SPECIALTIES INCORPORATED

• Representatives in Principal Cities

9331 FREELAND AVENUE • DETROIT 28, MICHIGAN

MANUFACTURERS OF *ECONOMY-ENGINEERED* RADIANT HEAT EQUIPMENT

"DUAL HEAT" INFRARED OVENS • CONVEYORS • PAINT DIP TANKS

MULTI-PURPOSE

NEW TYPE COATING

1. Prolongs product life

2. Cuts structural maintenance costs

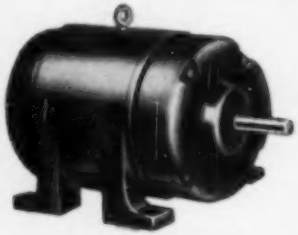
Rust-Chek
COATING

resists water, salt and fumes

Originally developed, on special request, to stop excessive corrosion of railway track in tunnels, this new type coating is finding ever broadening acceptance as both a product undercoat and for maintenance painting as a 2-coat operation.

Rust-Chek has exceptional resistance to water, salt and acid fumes; retains, through long years of service, unusual qualities of flexibility and adhesion that definitely prevent chipping, cracking or peeling.

Investigate now! Skilled Rinshed-Mason engineers to help you!



For PRODUCT UNDERCOATS

Corrosion-resistant, tough and durable, Rust-Chek is highly recommended as a product undercoat, and especially if the product will ultimately be subjected, in use, to corrosive atmospheres and moisture. *May also be used as a finish coat if high gloss and special coloring are not required.*

For STRUCTURAL STEEL

Bridges or factory structural steel work can be quickly and easily coated with Rust-Chek, adding countless years of life and greatly lengthening time between coats. Rust-Chek puts up a solid front against salt spray, fumes from processing equipment, etc.

Write for DESCRIPTIVE FOLDER

Free Descriptive Folder and specifications will be sent you on request. Test sample will also be forwarded if wanted.

RINSHED-MASON CO.

5935-71 MILFORD AVE., DETROIT 10, MICH.

FINER FINISH SANDING AT A NEW LOW PRICE!

14,400 SANDING STROKES PER MINUTE

- Straight-Line Reciprocating Action—Leaves No Marks
- Only Two Moving Parts — Never Needs Oiling—Uses 110-120 v. A.C.
- Easy To Use—No Bearing Down — Continuous Use Doesn't Tire Operator
- Weight Less than 5 lbs.— Over-all Size, 3⅛" wide x 4½" x 7"
- Dust-Proof — Fool-Proof — Fully Guaranteed
- 21 Square Inches of Sanding Surface.

RUGGEDLY BUILT FOR ECONOMY-WISE INDUSTRIAL FINISHERS

The new Dremel Model 2000 is a fast-cutting, finish sander. It offers for the first time in the industrial field, a truly top-quality electric sander at a remarkably low price. Its rugged construction, trouble-free design, versatile performance—plus low initial purchase and operating cost—all demand your thorough investigation. Call your supplier, or write us for details.

DREMEL MANUFACTURING CO., 2404 18th St., Racine, Wisconsin

ELECTRIC DREMEL POWER TOOLS

EVERY SHOP NEEDS . . . EVERY SHOP CAN AFFORD THE NEW DREMEL ELECTRIC MODEL 2000 SANDER

The finish that introduced the furnace into playroom society

Problem: Design a mar-resistant, heat-resistant finish for furnace jackets that makes furnaces colorful and attractive as furniture.

Solution: Industrial Finish Engineers developed special finishes in striking colors that resist heat and marring. They go on quickly, dry faster. Their beauty helps sales.

The better the

© 1950, NATIONAL PAINT,

What industrial finish means to sales!

Here is a paragraph from a letter received from one of the largest furnace manufacturers in the country:

"We believe that the finish of our product is of great importance, because that is the part that people see. It plays a great part in selling customers on your product."

We repeat, this is one of the country's largest furnace manufacturers.

A part of their success is due to Industrial Finish Engineering. Find out today how it can increase the saleability, lower production costs of *your* product.

The industry has technical ability to make finishes to suit your specific requirements. Remember, more and more of your customers *start buying with the finish in mind.*

Problem: Find a finish for washing machines that would not be affected by soap and washing powders.

Solution: Industrial Finish Engineers developed special finishes that resist soaps, washing powders and hot water. These quick-drying and baked finishes can be applied after assembly, speed production, cut costs.

Problem: How to equip toy plastic cars with authentic-looking chrome bumpers, without upsetting production.

Solution: Industrial Finish Engineers developed a finish that will not attack the plastic—dries in one minute for continuous production. It improves saleability, keeps costs down.

Problem: How to eliminate the expense of spraying an undercoater over the stain on juvenile furniture.

Solution: Industrial Finish Engineers developed a dip method that used a heavily built-up stain. Result—production savings; a final finish equal in quality to the original method.

finish—The better the buy!

VARNISH AND LACQUER ASSOCIATION, INC., WASHINGTON, D. C.

LOOKING FOR *Perfection*★ IN FINISHING?

★ YOU'LL GET BETTER RESULTS WITH BEDE PAINT HEATERS

PAINT PUMPED DIRECTLY FROM ORIGINAL DRUMS AT LINCOLN ELECTRIC CO.

Here are 8 reasons for trying this new process of finishing:

1. Solids are higher
2. Solvent waste is lower
3. 43% greater coverage
4. Fewer coats needed
5. Better flow-out
6. Increased capacity of finishing room
7. Finish has less tendency to sag
8. Blushing is eliminated

Want additional reasons? Write, wire or phone NOW for *complete* information. No obligation.

BEDE Paint Heaters are approved by both the Underwriters' Laboratory and the New York City Board of Standards and Appeals . . . Explosion Proof! Aluminum is used as the heat-transfer agent, eliminating water and other troublesome liquids.

At the Lincoln Electric Company, Cleveland, Ohio (shown above), two colors are pumped directly from original 55-gal. drums by two BEDE Circulating Paint Heaters. Full coverage of welders is attained with one pass instead of the two formerly necessary.

WRITE . . . For your Free copy of "The Hot Spray Process . . . Advantages - Causes - Effects" by James A. Bede . . . and complete information.

BEDE PRODUCTS Inc.
INDUSTRIAL FINISHING SPECIALTIES
4311 RIDGE ROAD • CLEVELAND 9, OHIO

District Sales Offices: Cranford, N. J. • Detroit, Mich. • Chicago, Ill. • Dallas, Texas • Menlo Park, Calif. • Distributors in Principal Cities

The experience of Watson-Standard Laboratories in the field of decorative and functional coatings for the Metal Lithographer has been widely recognized.

Their accomplishments include the development of such outstanding finishes as Wet Print Varnishes, Base Whites, Quick Bake Finishes, Gold Lacquers and Blacker Litho Blacks.

These finishes are available in vinyl as well as conventional types.

These are not of standardized formula but are prescription compounded to fulfill the needs of each individual application. The services of our laboratory and field technicians are available to you without obligation. Let us help you with your problem.

Write today.

THE WATSON-STANDARD CO.
225 GALVESTON AVE. PITTSBURGH 7, PA.

Longer Lasting, Better Looking

PITTSBURGH LAVAX ENAMELS

Give Fine Home Appliances Even More Sales Appeal!

THERE is a good reason why many leading manufacturers of refrigerators, washing machines, hot-water heaters, kitchen cabinets and other household appliances use famous Pittsburgh Industrial Finishes.

● **Working** in close cooperation with the engineering and technical staffs of these organizations, Pittsburgh has produced tailor-made Industrial Whites of outstanding quality and performance to meet their needs and standards.

● **These coatings** have the smoothness and opacity needed for all the various kinds of appliances. They adhere well and attain the desired hardness under specified baking schedules. They resist grease and humidity. They hold their initial gloss and color through many years of service.

● **Consequently,** these fine Pittsburgh Finishes not only add to the customer appeal of fine appliances on the salesroom floor but also keep them looking better longer in the homes of purchasers.

● **Such cooperation** with the appliance manufacturers is another example of the valuable assistance Pittsburgh has given users of industrial finishes in many fields. This understanding of finishing problems, based on practical experience, can be helpful to you. Call on us for facts and figures.

PITTSBURGH PLATE GLASS COMPANY
Industrial Paint Division, Pittsburgh, Pa.
Factories: Milwaukee, Wis.; Newark, N. J.; Springdale, Pa.; Houston, Texas; Los Angeles, Calif.; Portland, Ore. Distler Color Division, Detroit, Mich. The Thresher Paint & Varnish Co., Dayton, Ohio. Forbes Finishes Division, Cleveland, Ohio. M. B. Suydam Division, Pittsburgh, Pa.

PITTSBURGH *Industrial* FINISHES

PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

Preparing Metal Surfaces for Painting

By Edwin Lacy
Oakite Products, Inc.

IT IS A WELL KNOWN fact in industry that most untreated metals will oxidize when exposed to the elements—unless they are adequately protected in some way. This need for protection is one of the reasons for the development of the vast protective coatings industry.

The degree or value of the protection afforded by a paint film is influenced largely by the care and diligence used in properly preparing the metal surface before the paint film is applied. You have probably seen the results of poor or careless preparation—such as poor adhesion, blistering and peeling of the paint film. Naturally, other factors must be considered too, such as the type of paint used, the baking temperature, etc.

Let us look into this matter of surface preparation and see what is involved. Considering steel first, we find that when it comes from the mill in sheet form, ready to be fabricated, steel is usually coated with a mineral oil to protect it against rust. Fabrication into various articles frequently requires the application of a drawing lubricant which may consist of heavy oils and special compounds. These oils, greases, compounds, shop dirt and traces of hand contact must be completely removed, and the metal surface must be properly treated before paint is applied—that is, if the paint is to serve as a dependable and durable protective coating.

Cleaned Surfaces Treated With Phosphate Solutions

Actually there are about eight principal methods of preparing steel surfaces for painting. However, because of its great industrial development and economy, I would like to pay particular attention to one method — applying acid phosphate solutions in automatic mechanical spray washing machines. Since 1908, when the Coslett process was first used commercially for putting phosphate coatings on the surfaces of steel articles, continued re-

Editor's Note: Recently Mr. Ed Lacy, one of the Detroit, Mich. Technical Service Representatives of Oakite Products, Inc., was invited to give a talk on this subject before a group of technical men representing a large paint manufacturer. Since the preparation of metal surfaces for painting is an operation that is continually growing in importance and scope, we present here, with permission of Oakite Products, some excerpts from Mr. Lacy's interesting talk.

search has demonstrated that when properly cleaned steel surfaces are treated with acid phosphate solutions before painting, the subsequent paint film shows greatly increased adhesion to the base metal and superior resistance to corroding influences of all kinds.

In 1929 automobile bodies were first given a form of phosphate treatment in mechanical washing machines. Since then there has been a steady improvement in the materials, as well as the methods, for applying certain compounds, based on phosphoric acid, to such parts as automobile bodies and fenders as well as electric refrigerator panels, steel furniture, and many other articles. In recent years, further advances in this work have resulted in finding means of incorporating suitable detergents in the phosphate baths so that *it is now possible to clean and phosphate a metal surface simultaneously, with one solution.*

Combine Cleaning and Phosphate Treatment

One material of this type, employed in a specialized process, is so advanced and beneficial, that U.S. Patent protection was recently granted on both the material and process. Incorporating a suitable detergent, along with other carefully balanced ingredients, the material does an excellent job of removing light oils, shop dirt, smudges, etc., and at the same time it creates a light but dense coating of phosphate crystals which are an integral part of the base metal. *Both cleaning and phosphatizing are accomplished at the same time, with just one solution, thus making for simplicity and economy in handling this type of work.* Since solutions are operated at a pH of 4.5, no special acid-resistant tanks are required.

The primary objective of such surface treatment is to produce a stable and non-reactive coating that is chemically combined with the base metal. It is this inert and non-metallic layer between the base metal and the paint film that enhances resistance to corrosion and preserves the firm adherence of the paint film. It is usually applied to the metal shortly before painting, that is within several hours, for while phosphate coatings alone give some rust protection, none are intended as permanent rust inhibitors.

Equipment and Process for Cleaning-Phosphatizing

Automatic equipment recommended for the application of the process being discussed here generally has a minimum of three stages. First, there is a hot wash for 90 to 120 seconds in the cleaning-phosphatizing solution. This is followed by a warm rinse of 30 seconds, and a final chromic acid rinse for 30 seconds. The pressure maintained at the spray nozzles generally ranges from 12 to 20-lbs. per square inch.

Once in the washing machine, the metal surfaces are usually kept wet with solution or rinse water; drying in between stages (usually because of stopping the conveyor) may cause rusting of the parts. Generally this can be prevented by the use of misting nozzles which keep the parts wet with a finely divided spray of cold water.

(Continued on page 26)

Temperature of the final rinse is usually kept at around 175° F. to promote drying. *The purpose of this chromic acid rinse, with its concentration at say one tenth of an ounce per gallon of water, is to act as a sealer of the phosphate film.* The combination of phosphate coating and chromic acid tends to passivate the metal. Then if a deep scratch is made in the paint film while the article is in use, the corrosive action of any moisture that gains access to the bare metal is retarded. As a result, damage to the protective paint coating is localized; it doesn't spread far from the scratch.

The thickness of the phosphate coating developed is generally much less than 1/1000 of an inch, and the weight of a coating may vary from 50 to 200 milligrams per square foot of surface area. The phosphate film causes no important changes in the dimensions of treated metal parts. Tests show that this fine low-porosity coating provides excellent paint adhesion.

Now, a few words about aluminum. Today there is an increasing amount of aluminum which is being painted after it has been cleaned and phosphatized. The conditions for treating aluminum are essentially the same; in fact, in some installations, both aluminum and steel parts go through the washer at the same time. Generally, in preparing aluminum, the pH of the solution is lowered by increasing the phosphoric acid content.

In order to properly evaluate paint films and to determine, with reasonable accuracy, how well they will stand up under weathering conditions, the use of a salt spray cabinet is a valuable help. Painted panels are placed in the cabinet and subjected to a corrosive fog of sodium chloride solution, which is maintained at a definite temperature, until the paint film shows signs of failing. The standard method is to make two deep scratches, X-shaped, through the paint film before making the test. The progress of the rust, as it creeps from the original scratches, is observed. When it spreads ⅛ of an inch on either side of the scratches, the panel is said to have failed. The number of hours it takes the rust to spread this distance is the salt spray value.

Where the work is done in a cabinet built according to American Society of Testing Materials Specifications, and the standard method is followed with care, results of real comparative value can be obtained. If the standard method is not followed, however, the results secured are worthless. To illustrate how the method of preparing a surface for paint affects the actual resistance of the paint film to corroding influences, as shown by salt spray, two steel panels were treated.

Untreated and Treated Steel Panels Tested

Panel A was cleaned for 15 minutes in a boiling 8-oz. per gallon solution of heavy duty alkaline detergent. Then it was given a hot rinse, dried with a hot air blast, and painted with olive drab enamel, using a Fisher-Payne dip coater at a withdrawal rate of 3-in. per minute. The panel was then baked for 45 minutes at 250° F. and air dried for 24 hours. Testing revealed the aver-

(Continued on page 28)

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age thickness of the paint film to be .71-mil. Salt spray tested (ASTM-B-117-49T) panel A failed after only 96 hours.

Panel B was wiped with ethylene dichloride to remove the excess storage oil present. Then it was cleaned and phosphate treated for two minutes in a spray washer. Pressure at the nozzles was about 20-lbs. per square inch. The material was used at a strength of 2-oz. per gallon of water and the solution was maintained at a temperature of 160° F. Next, Panel B was given hot rinse with clear water, a hot chromic acid rinse, and then dried and painted with the same paint, and in the same manner as was Panel A. After baking and drying, the average thickness of the paint film was measured and was found to be .72-mil., almost exactly the same as that of Panel A. It was then given the identical salt spray test given to panel A. At the 600-hour mark, the rust had still not spread the $\frac{1}{8}$-in. necessary to cause the panel to fail.

Humidity and Water Immersion Tests

Two other methods of testing painted surfaces are the humidity test and water immersion test. Time prohibits any lengthy discussion of these, but essentially, as their names imply, these tests subject the painted test pieces to standard humidity conditions and to immersion in water. Here again, the value of the results is entirely dependent upon the standard conditions being maintained. Slight variations in conditions produce great variations in results. It is for this reason that unless standard conditions are maintained throughout the tests, the results are of little or no value.

Here I have endeavored to cover the essential requirements of cleaning metals before painting. To say that the preparation of the surface is as important as the application of the subsequent paint, will hardly be doubted. In this way our common objective is to provide a finish of higher quality and longer life.

Employee Suggestions. While a few companies have found suggestion boxes helpful, the majority claim that they produce little or nothing. Perhaps one of the reasons for the few suggestions offered by employees is the reluctance or inability of most men to write their ideas clearly on paper. Or, a man might have a good suggestion but because paper, pencil and time are not available at the moment, he puts it off indefinitely—and never does get around to it.

There is a much better method. In almost every firm at least one individual keeps on terms of easy familiarity with all of the men in the shop; he is equally welcome and respected in the spray room and in the front office. This man should be appointed to personally receive any written or verbal suggestion that an employee has to offer, and to convey this suggestion to the proper place for decision and action. Further, the company should acknowledge every idea, no matter how ridiculous it may seem. Those who suggest things that can be put into service should be liberally rewarded.—G.A.C.

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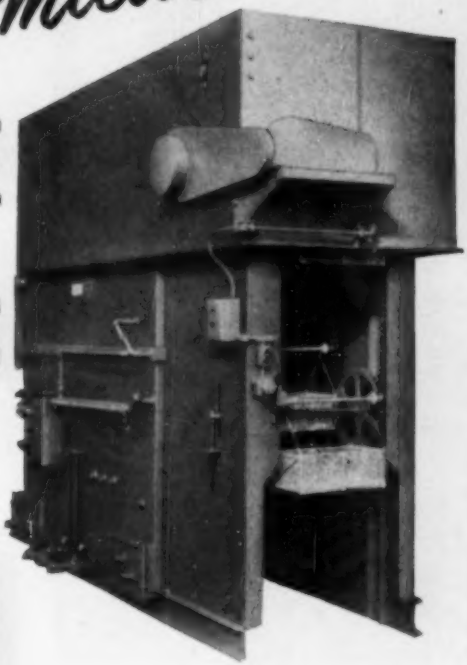

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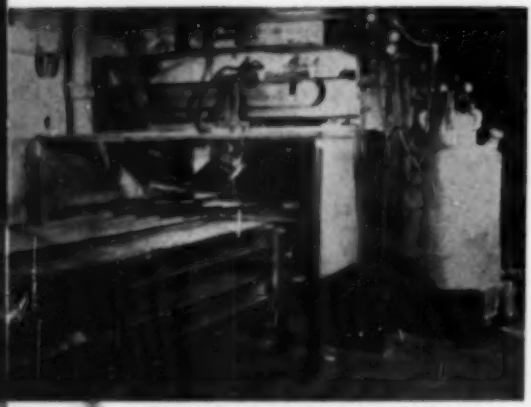
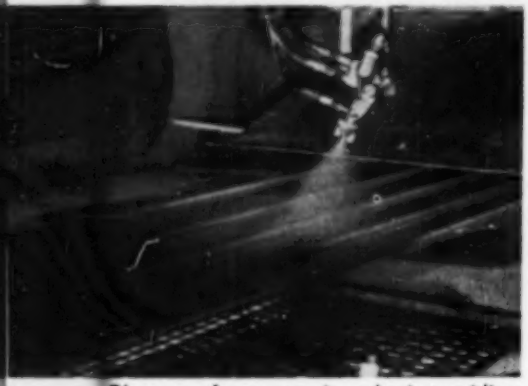
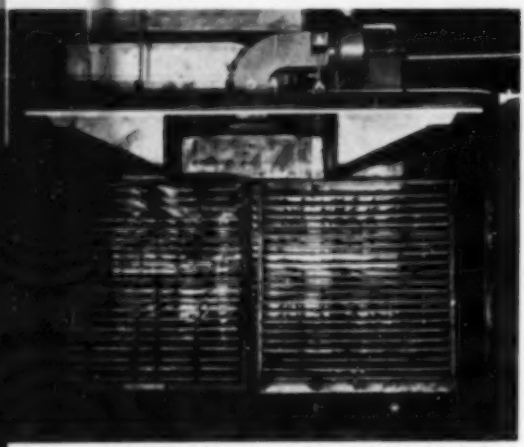


View of automatic spray painting setup.



Close-up of gun spraying aluminum siding.



Painted siding in racks ready to be baked.

Automatic Spray Painting and Baking Setup

Richard H. Nappi, President of Industrial Finishing Co. (no connection with I.F. Magazine), Long Island City, N.Y., sends in snap shot pictures of his newly installed facilities for automatically spray painting aluminum house siding and then baking the finish in a gas-fired oven (see pictures on this page).

Quoting from Mr. Nappi's letter:

"An automatic spray gun traveling at right angles to a moving conveyor insures an even and uniform film. The film thickness may be varied and controlled by regulating the gun travel and conveyor speeds.

"The equipment described not only produces a uniform film, but by the use of a direct-fired gas oven of the circulating type, absolute uniformity of color is maintained. It is sufficiently elastic to handle flat or almost flat items up to 4-ft. wide and up to 13-ft. long. With comparatively simple changes and additions, this equipment may be used for finishing formed products and stampings of various types."

Jacobs Represents Detrex in Texas

The Detrex Corporation, Detroit, manufacturer of industrial cleaning equipment and chemicals announces that Gordon A. Jacobs has been appointed representative in charge of the Dallas Division, which includes the states: Texas, Louisiana, Oklahoma, and Arkansas.

Mr. Jacobs is a graduate engineer and has had broad experience in marketing, field servicing, and consulting on Detrex processes — including solvent vapor degreasing, alkali and emulsion cleaning, and rustproofing.

Oakite at Metal Show

Oakite Products, Inc., New York, manufacturers of specialized metal-cleaning and related materials, is featuring recent additions to this line in Booth 322 at the National Metal Exposition, Chicago, October 23-27.

The Oakite booth will be staffed by F. J. McNally, Chicago Division Manager, assisted by main office engineers and metal specialists from the Company's field service organization.

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HOW TO GET THE BEST PERFORMANCE FROM YOUR

Compressed Air System

By Gilbert C. Close

The best performance of spray guns and of air-operated pumps, agitators, pressure containers, rubbing and sanding machines, depends upon always having an adequate pressure of clean dry cool compressed air at every point of use in the factory.

IN TOO MANY PLANTS, the compressed air system is not accorded the attention it should have. It is expected to work consistently and faithfully with a minimum of maintenance. Little if any thought is given regarding its inherent capacity. Pneumatic tools, paint pumps, pressure containers, tank agitators, etc., are added to the system from time to time, but when any of this equipment fails to function at top efficiency, the tool is blamed more often than the overloaded air supply.

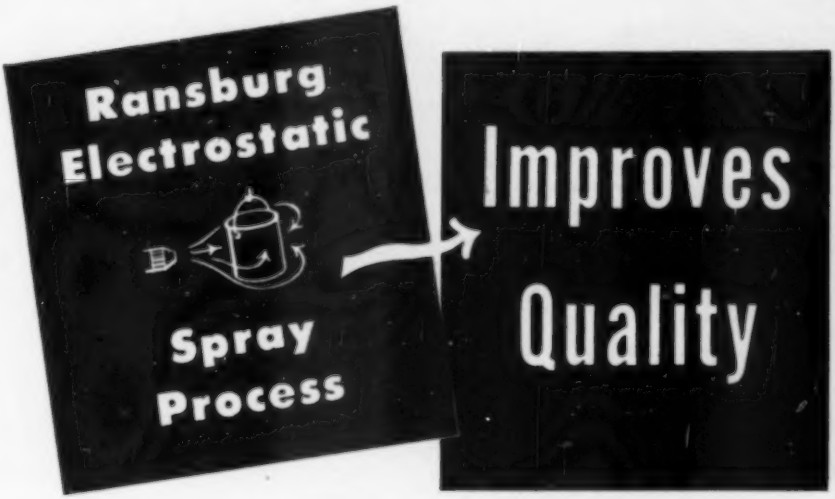
Enough Pressure, and Clean Air at Point of Use

The efficiency of any compressed air system is measured by three factors. There must be sufficient air of correct pressure at the point of use, and this air must be as dry as possible and contain a minimum of air-borne contaminates. The cost of obtaining this efficiency depends largely on the degree of planning that preceded installation of the system, and the degree of maintenance accorded the system once it is installed. A 1/16th inch hole in an air pipe operating at 100-psi. (pounds per square inch) looses about 182,000-cu.ft. of air a month. Left unrepaired, this one leak is enough to seriously impair the efficiency of a small system.

Five factors must be considered when planning a compressed air system, or when checking a system already in use. These are: 1) the number of compressors required; 2) compressor capacity; 3) compressor location; 4) system reglation; and 5) the distribution system. Disregarding any of these factors will result either in reduced operating efficiency or increased costs—perhaps both.

Location of Compressors; Layout and Size of Pipes

The number of compressors required and the compressor location are closely related factors. It is true that compressors of sufficient capacity are available to supply the requirements of almost any plant, but the efficiency of a centralized air supply drops sharply with an increase of plant area. [*To page 34*]



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In a large plant, or in a plant occupying several buildings, it is generally advisable to use several smaller compressors strategically located near areas of largest demand. This will minimize pipe layout problems and make possible the use of smaller pipe. Also, smaller compressors require less extensive intercooler and aftercooler installations. Furthermore, with several compressors on hand, the shutdown of a single compressor for maintenance or repair will not seriously interfere with production.

With the number of compressors determined, the capacity of each one becomes the next major problem. This requires considerable study of the plant's compressed air equipment and the nature of its operation. From the finishing angle, most air loads will be relatively steady. Paint container operation, material agitation and paint spraying are fairly continuous processes, with air guns for blowing away dust and dirt prior to painting being about the only intermittent demand—and this is a small one.

Heavy air loads that are fairly steady demand large compressor equipment and air receivers of comparable size; but when large loads occur only intermittently, while steady loads are relatively small, a large air receiver in conjunction with a small compressor will usually suffice. The difference in the amount of air used by steady loads and intermittent loads is often deceiving.

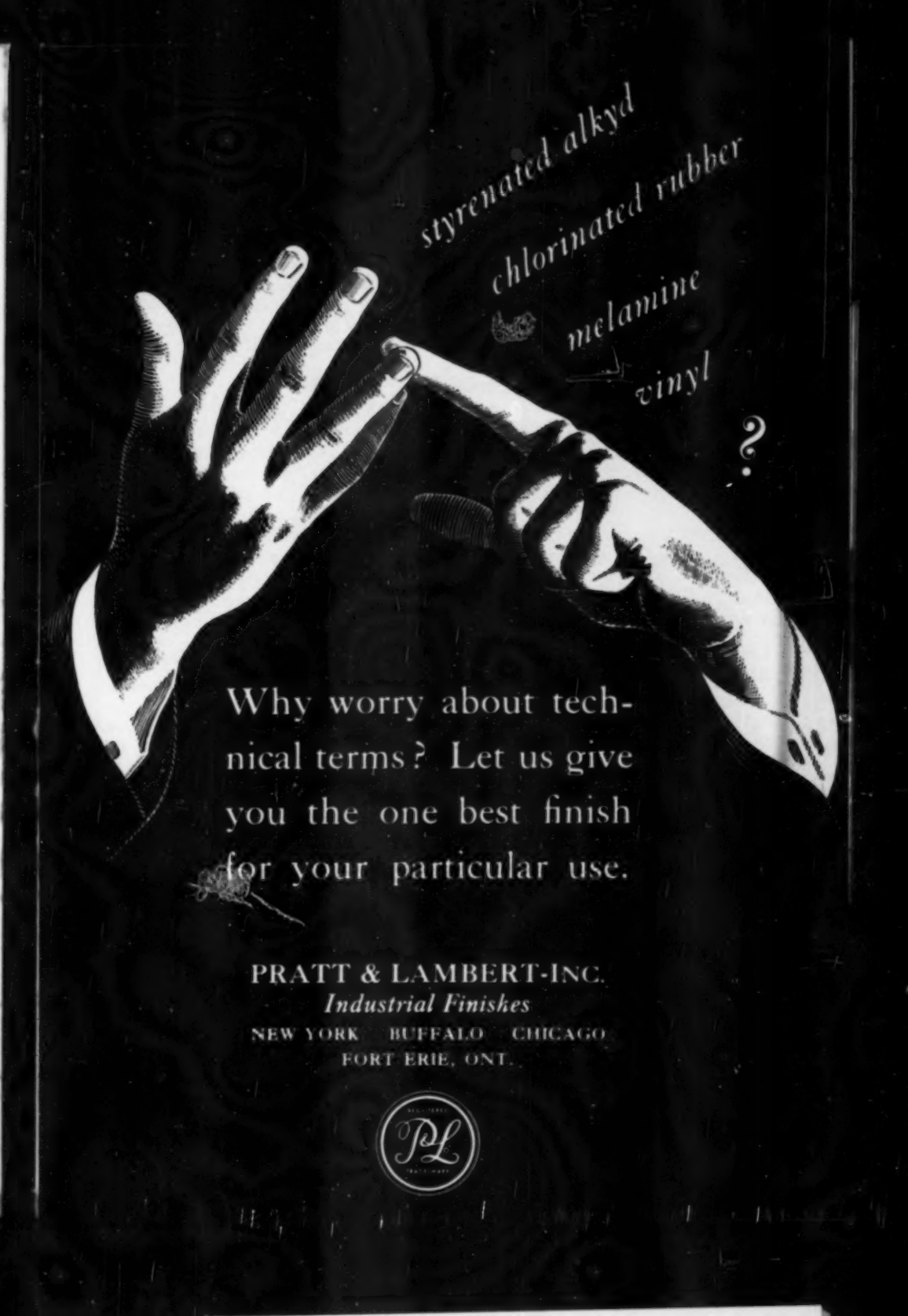
Pneumatic tools—for instance an air hammer or hoist—usually operate less than 10% of the total time. This means that a solution tank agitator using only 1/10th as much air as an air hammer, while the hammer is in operation, will actually consume as much air as the hammer over an average period of time. Such factors must be carefully analyzed when a new compressed air system is being planned, or when an old system is being overhauled.

The problem of regulation, of course, ties in closely with distribution. It is generally conceded that the drop in air pressure between the receiver and point of use should not average more than 10% and never exceed 15%. Greater pressure drops will result in lowered efficiency on many air-operated tools. This can become a costly factor when a great number of air tools are used.

Distribution of Comp. Air; Drop of Pressure in Line

With an allowable 10% pressure drop, the narrowness of air pressure regulation in the air receiver depends entirely upon the amount of this pressure drop that occurs in the lines leading from the receiver to the point of use. If this drop is exactly 10%, air pressure in the receiver would have to be maintained almost constant. If the drop is only 5% in the lines a 5% variation in receiver pressure would be permissible. There is some loss incurred in constant starting and stopping of compressor equipment, and some loss, of course, through relief valves, so a wider range of receiver pressures is desirable.

A drop in air pressure through the distribution system is an irrecoverable loss. The pressure at the receiver end of the system is capable of doing a certain amount of work; and the same applies to the pressure at the point of use. The



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difference is as much a loss as when electrical current is carried by too small a wire and dissipates itself as heat. Efficiency of the compressed air system, from the cost standpoint, increases directly as this pressure differential is diminished.

Several methods are available for decreasing this pressure differential. As already mentioned, location of compressors near points of greatest use is one method. A second method is to install larger air pipes. As a great part of the cost of installing such a piping system is labor, the additional cost of larger pipes, to begin with, will be small. When a piping system is already installed, it is sometimes more economical to use a parallel system than to tear out the old and install a new one.

Loop System of Compressed Air Piping Layout

The loop system of air pipe installation should be used whenever possible. This means simply that both ends of the air distribution system are connected to the receiver; then the compressed air has a two-way path to reach the point of use, and less effect will be noticed when the system is intermittently overloaded at any one point. In this conjunction, it should be remembered that pressure loss varies roughly as the square of the velocity of the air flowing through the pipe; and when a two-way system is used, the velocity, to all practical purposes, will be cut in half.

From the standpoint of maintenance of compressed air systems, two factors are of paramount importance; first, elimination of moisture, and second, prevention of leaks. Offhand, it might seem next to impossible to maintain an extensive air pipe layout without leaks. On the other hand, gas companies have established a standard permissible leakage of one cubic foot of gas per minute per mile of 3-in. pipe. This is evidence that leaks can be eliminated.

Where to Look for Air Leakage

Leakage in compressed air systems occurs at three principal points —at unions in the line, such as drains and lead-offs; in air hose leading to the tool, and through the idle tool. Correction in all three cases is obvious. The point to emphasize is that such connections and tools must be watched, and when a leak is discovered, it should be repaired at the earliest opportunity.

Visit any plant where little attention is paid to the compressed air system, and chances are good that several leaks will be discovered. Often there will be evidence that these leaks have persisted for some time. In many cases the losses caused in this way will total more cubic feet of air than is used by all of the plant equipment. This means that the compressed air is costing more than double what it should, due to lack of proper care.

Removal of Moisture from Compressed Air

The second all-important point, which is substantially a maintenance function, is elimination of moisture from the air before it reaches the point of use. This is accomplished by various system features, but the features require constant attention in order to function prop-

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erly. Water traps should be installed in both the compressor intercooler and aftercooler equipment, and in the air receiver tank. Drain legs should be incorporated at frequent intervals in the distribution system, and the pipe should be installed on a slight slant toward these legs.

All take-off connections should be made on top of the air pipe to prevent water from leaving the main pipe and entering the hose leading to the tool. It should be remembered that overloaded air pipes constitute a real moisture hazard, as the velocity of the air through the pipe will carry the moisture with it regardless of traps or drain legs installed to oppose it.

In speaking of moisture control, the subject of air compressor equipment cannot be avoided. This pertains especially to intercooler and aftercooler installations. While offhand the purpose of the intercooler and aftercooler is to cool the air and thereby increase its density, this same cooling effect tends to reduce the ability of the air to contain moisture. Thus intercooler and aftercooler installations, as well as the compressor cylinders (which are usually water-cooled), act in effect as water traps with moisture leaving the air as it is cooled. This effect is so pronounced that many intercoolers, aftercoolers, and compressors are equipped with automatic self-unloading water traps to discharge the water that is collected in this manner.

Efficient Air Setup at Douglas Aircraft Co.

The El Segundo plant of Douglas Aircraft Co., at El Segundo, California, has a compressed air system that might be described as ap-

The performance of workers at spray booths depends largely upon the quality and volume of compressed air available at this important point of use. Photo from Douglas Aircraft Co.

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proaching the ideal. This plant, consuming an average of over 4000-cu.ft. of compressed air a minute, depends upon its compressed air supply for operation of its many paint booths, for agitation of numerous solution tanks, and for powering thousands of pneumatic shop tools. Leonard Stagnaro, supervisor in charge of compressed air equipment, points out that the very volume of air used makes it necessary to exercise every possible economy and grasp all opportunities to increase efficiency.

The various compressors located throughout the plant obtain incoming air, through filters, from outside the building. These filters are changed as often as necessary to assure cleanliness. Two-stage compressors are used, with an intercooler between the low and high pressure cylinders. Air leaving the high pressure cylinder passes through an aftercooler before entering the receiver tank.

Water Cooling System; Weekly Inspection

Both the intercooler and aftercooler are water-cooled. This water circulates to conventional overflow cooling towers located on the roof of the building. Scale in the cooling system is watched carefully and removed whenever it becomes heavy enough to affect the efficiency of the system. This can be noted by watching the temperature at which the cooling water operates.

All compressors are thoroughly inspected once each week for proper operation and required adjustments or repairs. Flow meters are installed in the compressor cooling system; these are set to automatically cut out a compressor when the cooling water fails. This may happen when high winds blow water out of the cooling towers atop the building. An alarm bell sounds in the central maintenance office if a compressor fails to start when air pressure in the system drops below a pre-determined point.

Automatic water traps are installed in the intercoolers, aftercoolers and receiver tanks. The receivers are located, insofar as possible, near the points of greatest demand. Galvanized iron conductor pipes are used, and these are of sufficient size to carry the air with minimum velocity to the point of use. These large pipes reduce pressure losses caused by high air velocities, and minimize the danger of moisture carryover caused by fast-traveling air.

Slant Piping to Drains; Take-offs at Top of Pipe

All conductor piping is installed on a slight slant toward drain legs spaced at frequent intervals throughout the system. Whenever possible, take-off connections from the main pipes are installed on top of the pipe to further prevent moisture from entering the hose or pipe leading to a tool. In critical operations, where moisture elimination is vitally important, additional filters are installed between the main distribution lines and the point of use. All air entering paint booths is filtered a second time before it enters the paint pressure pot.

Vigilant maintenance of the compressed air system goes on constantly. Water traps are inspected and cleaned regularly. Filters are changed as soon as they become

DAY & NIGHT

EFFICIENCY

UNIFORMITY

Pictured above: electrostatic spraying

Pictured above: Panelray units leaving continuous baking oven.

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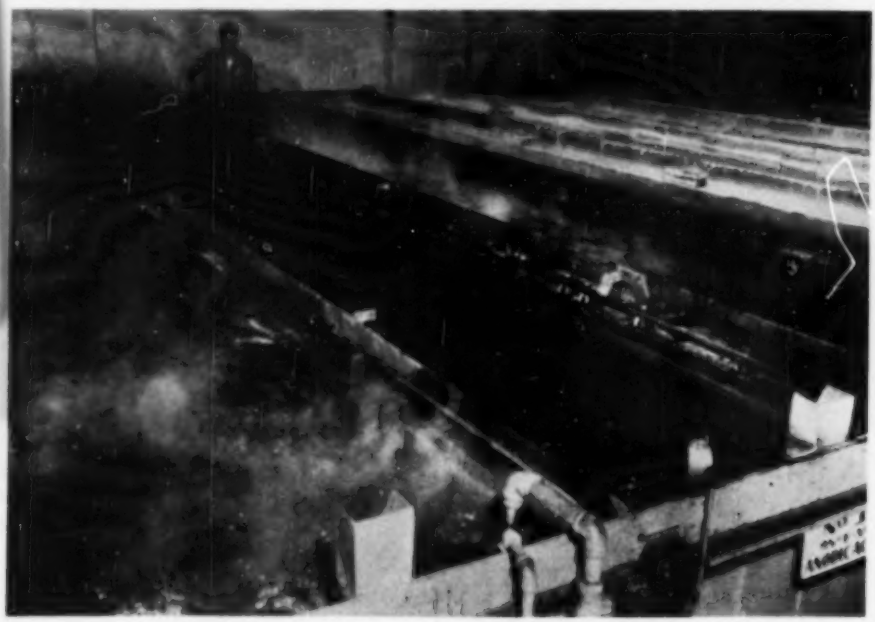
dirty. Leaks are watched for and repaired as soon as discovered.

The net result of this installation and the care with which it operated and maintained, assures the plant an ample supply of clean air wherever and whenever it is required. The shortcomings that are found in so many compressed air systems have been ironed out. A slight additional expenditure in materials and time is more than repaid by getting utmost efficiency from the thousands of pneumatic tools, spray guns, paint containers and cleaning and solution tanks that are on the Douglas production line.

Compressed air systems are a vital part of most industrial plants. Failure of the system would constitute a production hazard comparable to failure of the electric power supply. But unlike electric power, which is billed monthly and thus becomes a visible cost, the cost of operating a compressed air system is often lost in the maze of overhead expenses. This does not mean that it should be ignored. Hundreds of tools along the production line operate only as efficiently as the available air supply permits. Perhaps without realizing it, many companies who ignore this important source of power or means of transmitting power by air are needlessly taking a loss that could be prevented by changing or even by properly maintaining their air supply system. [END]



Here are some of the air-agitated anodic tanks in Douglas Aircraft Co.'s El Segundo plant.

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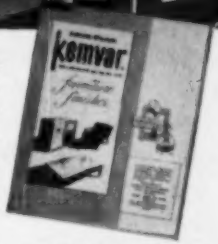
Sherwin-Williams Industrial Research played a dual role in the production of this outstanding furniture. It solved the problem of reproducing, on a production basis, the unusual "weathered" effect visualized by the designer. It also provided, in the finishing system setup, the marvelously resistant qualities of KEMVAR*... the sensational Sherwin-Williams baked-on synthetic finish (also air-dry types).

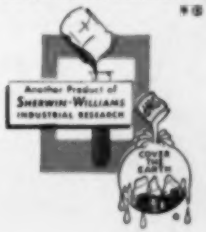
The finish of the new "Cross-Country" line, as a result, offers exceptional resistance to hot and cold water, alcohol, nail polish remover and many other materials ordinarily ruinous to furniture.

KEMVAR and Sherwin-Williams know-how on all types of product finishes may offer you important advantages, too. Investigate—today! The Sherwin-Williams Co., Industrial Div., Cleveland 1, Ohio.



KEMVAR—what it is, and how to use it, are described in brochure K-101. Ask for copy on your letterhead.

*T.M.



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*DP means Direct-drive Piston

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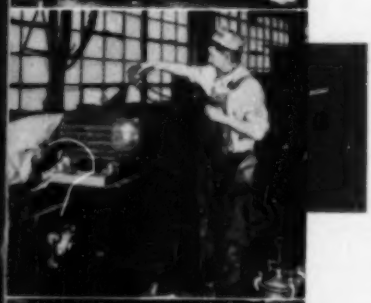

C

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You can use the DP unit on the assembly line...out on the plant floor...in the shipping room...anywhere there's a paint job to be done. You know that it will do the job fast, well, and economically.

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Touch up rejects or damaged finishes right on the assembly line or anywhere in the plant. Plenty of pressure for air cleaning with Binks Models 150 or 190 Blow Guns.

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A big time and money saver in maintenance work. The complete portability of the Binks DP unit permits taking it to any job. Indispensable for routine repairs.

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Ideal for small parts, light spray finishing, and odd jobs. Handles regular production loads in small plants. Sprays metallics, enamels, lacquers, shellacs, house paint, etc.

"The Binks DP unit is just one of the many Binks developments designed to make finishing easier and more economical for you."

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Chairman of the Board

Send today for your free copy of the illustrated Bulletin 601 which describes fully the DP unit and also spray gun combinations for use with it.

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Fire in the Finishing Room

Where to look for fire hazards; how to eliminate or reduce them; training employes how to extinguish fires. What harm can come from breathing fumes from an industrial fire.

By H. H. Connelly

IT ISN'T NECESSARY to strain one's imagination to visualize what would happen if a heap of oil-soaked rags suddenly burst into flame near open gasoline tanks.

Few finishing room workers realize that many of the materials with which they are working (paints, solvents, lacquers and varnishes) if fired, can transform an apparently safe working area into a blinding, devastating furnace, and result in a fire that would be difficult if not impossible to extinguish, unless adequate fire-fighting equipment is available, and well-trained men are quick to use it.

The manufacturing plant that has not faced the ruinous effects of a fire in the finishing room is fortunate. After years of operation without a fire there is danger that laxness and complacency will creep into an industrial organization.

Sometimes a small fire, if extinguished promptly, will prove to be helpful. It may awaken both the management and workers to the hazards that exist. This sharpened thinking should include a review of methods for the control of any fire emergency, and provision of the proper kind of fire-fighting aids.

Spontaneous combustion is a phenomena that everyone admits is

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possible but not many people have seen it actually occur. A finishing room foreman in a small furniture factory had heard of spontaneous combustion but he had no positive proof of it. Like most people, he felt that if it occurred, it would be in some other plant. He became careless and failed to remind his men about the danger of leaving finishing rags and wiping waste in the containers overnight.

Safety with Lacquers and Lacquer Solvents

Late one afternoon, a few hours after quitting time, the watchman stepped into the building and detected the acrid fumes of burning rags. He promptly traced the odor to its source and found a smoldering pile of oil-soaked rags in a loosely covered disposal can—a can that was supposed to have been emptied at quitting time but which had been overlooked as employes hurried away from the plant.

It is quite possible that there might not have been any job to return to, next morning, if the fire had not been discovered in its early stage and extinguished before it spread to drums of varnish, lacquer and other combustibles nearby.

The foreman capitalized on this incident and for many weeks used the charred remains as exhibit "A" in his argument for good housekeeping and the practice of safety —and as convincing evidence that spontaneous combustion can happen in most any factory.

For the finisher who is using lacquer, several pertinent facts should be stressed for safety. Spontaneous combustion has already been mentioned. Another point to keep in mind is that most all of the widely used lacquer solvents and diluents are flammable and their vapors form combustible mixtures with the air; furthermore, the majority of fires involving lacquer result from the ignition of this vapor-air mixture in some manner or other; therefore, the chief hazards to guard against are: 1) to prevent the formation of a vapor-air mixture in the flammable range in any appreciable volume and 2) to eliminate, as far as possible, the ignition sources.

The basic ingredient of lacquer is nitrocellulose. It is a highly combustible material. The solvents and diluents used in the formation of nitrocellulose lacquers usually have low flash points and most all of them are highly flammable.

A few common sense measures, if explained to the men who handle the materials and operate the equipment, will reduce the possibility of a fire. Their personal safety should be stressed as well as the safety of the plant and their jobs, since most persons are concerned primarily with their own personal safety. By stressing the personal angle: "I'll be hurt, or I'll be out of a job", the individual can be made to understand that safety is really his personal responsibility.

12 Matters That Should Be Regularly Reviewed

The responsibility for fire prevention and fire protection for safeguarding the lives of workers, their jobs, and the plant property is the responsibility of the management. The following is a partial list of important items that management should provide or have carried out:

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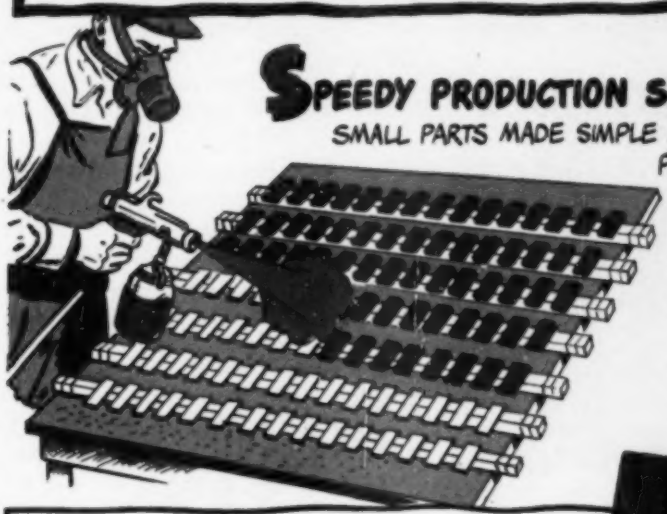

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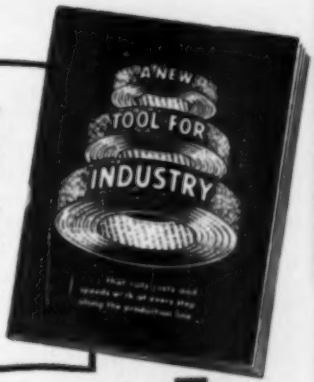

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INDUSTRIAL TAPES

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1) Finishing materials, flammable solvents and diluents, oils, etc., should be stored in an isolated, fire resistant building.

2) Electric equipment of the proper kind should be provided, which means that in the finishing room and nearby, all equipment should be explosion-proof, Class 1, Group D.

3) The use of portable electric tools and lamps can, at times, cause trouble. If portable equipment must be used, it needs to be of the proper kind for the work in hand and must be properly maintained.

4) Even electrical equipment of the proper classification, if improperly maintained, can be a source of trouble. For example, electric lamps should not be changed while current is on in the circuit, because of possible arcing when used lamps are being removed from sockets and new lamps are being put in.

5) All electrical equipment should be grounded to a ground resistance of about 5-ohms. With such a ground value, in the event of a "short" in the system, the protective device should open up and prevent further arcing at the "short".

6) All tanks, mixers, containers, etc., and pipe lines containing flammable solvents or solutions should be grounded to a low resistance ground of about 5-ohms to prevent the build-up of static electricity.

7) Adequate ventilation should be provided; this means that the size of the ventilating equipment should be such as to effect an air change often enough to prevent the formation of a flammable vapor-air mixture anywhere near the flammable range. Of course, as a matter of comfort for the persons employed, the ventilation needs to be such that vapor concentration never gets heavy enough to cause discomfort. In some cases, the air changes may be as often as every three or four minutes. Also, it is emphasized that every effort should be made to prevent the escape of vapor from mixing equipment, containers, etc., because quantities of vapor that get away unnecessarily represent a loss.

8) Only non-sparking tools and scrapers should be used in cleaning a spray booth or carrying out other work in the finishing department.

9) If at all possible, the water wash type of spray booth should be used. Where the "dry" type spray booth is used there is always some residue being discharged into the air; this can accumulate and create a dangerous condition. An incident is recalled wherein a large surface of a multi-story building became ablaze; this was the burning of lacquer residue which had accumulated. The use of water-wash type of spray booths almost completely eliminates such conditions.

10) Adequate fire protection should be provided. This should include an automatic sprinkler system of the proper design, with an adequate supply of water at effective pressure. At certain locations total flooding with carbon dioxide or dry powder chemical may be indicated. Carbon dioxide, dry powder, or foam first-aid extinguishers should be placed at strategic points, preferably near the building or room entrances, so that if a fire occurs, men can get away from the fire zone by means of the building exits,

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"COCKER FUR"

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Application shown thru courtesy of A. N. BROOKS CO. 500 So. Michigan Ave. Chicago, Ill.

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size up the situation, and then get the extinguishers and go back to attack the fire.

11) The mere installation of fire protection equipment is not enough. Employes in the finishing room should be organized into a fire fighting brigade and trained in the use of the equipment. This training should include the extinguishment of test fires set at locations safe for carrying out such a demonstration. The provision of effective protection, plus this training should pay off if a real fire emergency does arise.

The local fire department should also be called in and the hazards of the operation should be discussed with its personnel. If the local fire department is properly staffed, it should have a knowledge of similar work and operations, and its personnel may be able to offer suggestions and helpful ideas. Also, it will know what it may have to face if a fire emergency does arise in a particular plant, and it should be able to fight the fire more effectively because of this knowledge.

12) Men and women employed in the finishing room should be required to wear clean clothing and to keep fully clothed all of the time (winter and summer). Employes fully dressed have a much better chance of escaping serious burns than if partly clothed, if or when they are exposed to a fire.

It will also be advisable to give consideration to the use of flameproofed garments. Garments are now available which can be permanently flameproofed; that is many washings do not seriously impair the flame resistance of the garments; it is well known that flameproofed garments have effectively protected thousands of people exposed to flash fires.

Shop Cleanliness Is an Aid to Safety

Even with the best of equipment, fires are probable if shop cleanliness and housekeeping isn't of the highest order, and if supervision of working practices is not of the best.

Periodical inspection by a safety committee will help in finding unsafe conditions or unsafe practices; of course, merely finding them is not enough. After they have been found prompt action should be taken to eliminate the hazards.

The following measures, if regularly carried out, will reduce the possibility of a fire:

1) See that all containers for waste materials, including wiping rags, are emptied daily, and that such waste materials are disposed of properly.

2) See that all "dry" spray booths are properly lined with a safe material that can be easily removed and replaced at regular intervals.

3) See that all work aprons are spread out on benches to dry, and not left in a ball or tight roll and packed away or covered over.

4) See that all floors are swept clean daily; that the walls and ceilings are regularly cleaned. A collection of dust at these locations is a possible explosion hazard.

Products of Combustion; Dangerous If Breathed

Frequently, many of the precautions and much of the advice are directed toward fire prevention and fire fighting. While such matters are of major importance, attention

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needs to be given as to what to do in case a fire does break out, and what are the possible harmful effects of the products of combustion of the various materials.

If there is adequate knowledge as to what the effects might be, due to breathing of products of combustion, some of the serious after effects, sometimes fatal, could be avoided.

At one factory it had been the practice to take all wastepaper, lacquer residue and sweepings to a safe location for disposal by burning. The man assigned to this work, not being aware of the dangers of breathing the products of combustion stood near the fire and breathed some of the gases given off. Fortunately, the case was not too severe and he recovered, although he did contract pneumonia.

In May, 1929, a fire in the Cleveland Clinic Hospital caused the death of many persons. The fire originated at the X-ray film storage and several pounds of nitrocellulose X-ray film were burned. Unfortunately the products of combustion given off were distributed widely through the building by means of a ventilating-heating system; because of this, many persons were affected at a great distance from the fire source; furthermore, there was little knowledge of the nature of the products of combustion, which meant that many of the persons who breathed the fumes probably did not receive prompt and adequate medical attention.

Over the years many fire disasters have occurred wherein there has been a large loss of life. Sometimes, breathing the products of combustion of the material involved in the fire may have been thought to have caused the large loss of life —and no doubt, such is the case in some instances. However, it should be kept in mind that when any material burns, various gases can be produced. There can be oxides of nitrogen, CO, HCN, and other poisonous gases or vapors; some of these can cause serious effects on persons or even take life; therefore, the point to be stressed is that if a fire does occur, whether it involves the burning of lacquer, cotton, wool or what have you, *avoid breathing the products of combustion in so far as possible.*

If the products of combustion are breathed, it is advisable to have the persons affected receive prompt medical attention; advise the physician which products were involved in the fire and that the products of combustion may have some delayed action. If this precaution is followed, the probability of there being a loss of life by breathing the products of combustion will be reduced to a great extent.

Acknowledgment: Valued assistance in editing the foregoing article was generously given by Mr. C. L. Jones, Safety Engineer with Hercules Powder Co., Wilmington, Delaware.—Editor.

Synthetic Organic Chemicals

The 1951 edition of the booklet, "Physical Properties of Synthetic Organic Chemicals," has just been issued by Carbide and Carbon Chemicals Division, Union Carbide and Carbon Corporation. This 16-page booklet is a condensed guide for users of organic chemicals. It present data on applications and physical properties of more than 250 synthetic organic chemicals in tabular form for ready and easy reference. Copies may be obtained without charge by writing to Carbide & Carbon Chemicals Division, 30 E. 42nd St., New York 17, N.Y. (Form 6136.)

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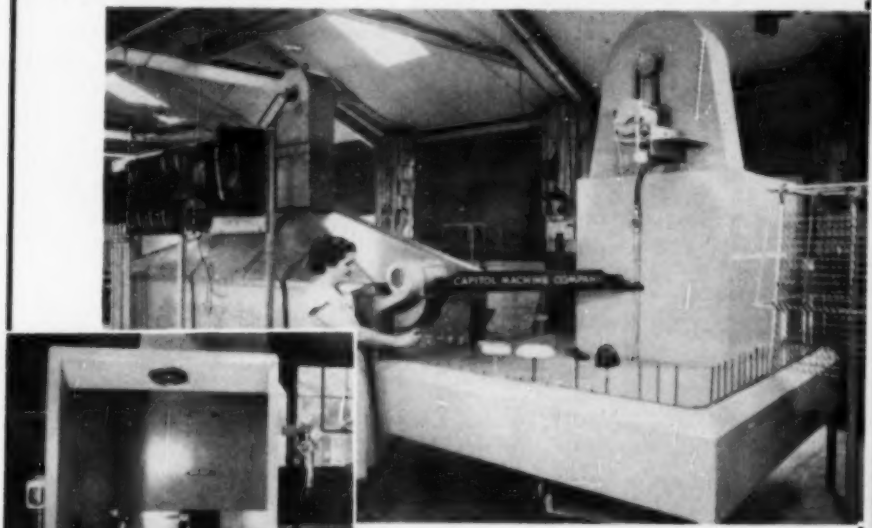

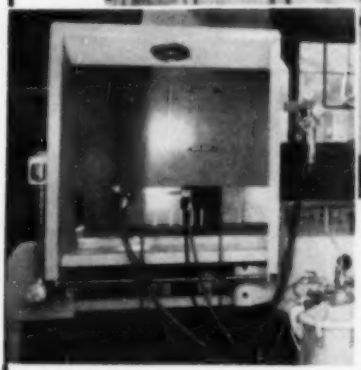

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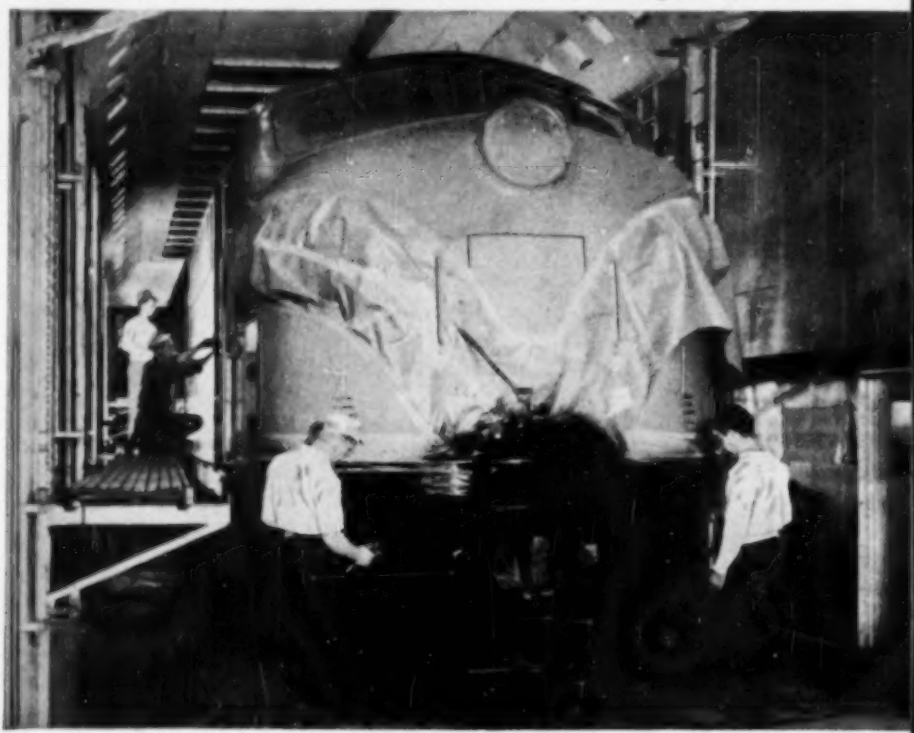
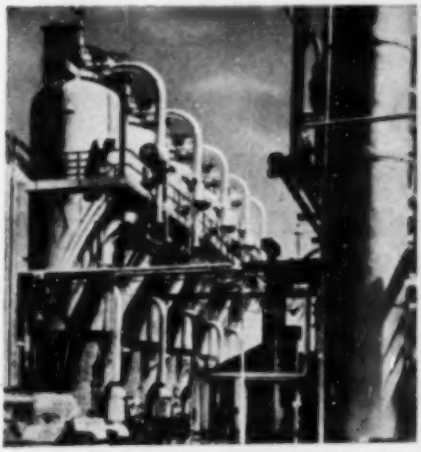
Whatever your problem involving finishes reducing manufacturing or maintenance co or improving the appearance, durability or sa appeal of your product—contact the Du Po sales technician in your area . . . or write E. du Pont de Nemours & Co. (Inc.), Finish Division, Wilmington 98, Delaware.



STANDARD BEARER FOR THE LINE! The appearance of a locomotive reflects on the organization behind it. The colors and insignia it carries immediately identify the line. With quick-drying Du Pont DUCO Top Coats, this giant Diesel locomotive can be finished in many different colors in one day—colors that keep their sparkle through long periods of constant exposure.



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CHICAGO 14

"My Paint Booth Worries Are Over"

By A. Gulino

Manager of Industrial Division
The DuBois Company

THE MODERN and efficient water-curtain spray booths give their best performance when they are clean. As with all other plant equipment, scheduled maintenance of paint booths is vitally important. No plant engineer would think of neglecting his lubrication schedule, yet few plants have any definite program for spray booth clean-up.

A few weeks ago I walked into a large midwestern plant and called on the plant superintendent who I had talked to about six months before. At that time we had discussed the proper maintenance of paint booths and the introduction of a planned program. As soon as I walked into his office he greeted me with these welcome words, "My paint booth worries are over". This was certainly good news because his booths had been a constant "headache".

I was curious to see what he had done. Shortly after my last visit, he hired a new assistant and one of the first assignments given the new man was to straighten out the spray booth situation. After talking about various processing problems, we

discussed the assistant's plan which had given this plant such clean and trouble-free spray booths.

The plan was a simple check chart plan that outlines definite jobs which the maintenance crew must follow every day, every week and every month. The work is divided so that the maintenance crew has specific jobs to do daily, weekly and monthly. In smaller plants the spray booths can be taken care of easily by one or two men when the work is properly scheduled.

Referring to the suggested maintenance outline illustrated in this article, here is a more complete and detailed schedule of the spray booth maintenance work by the day, by the week, and by the month:

Daily Maintenance Work On Spray Booths

1) Maintenance foreman shall test the concentration of spray booth compound in each water-wash booth. Foreman has titrating kit for control and will be responsible for all compound additions.

2) Paint sludge shall be removed from surface of tank every night.

3) Nozzles noted to give only partial flow shall be removed and cleaned manually.

4) Clean flood sheet of any paint build-up. Report heavy deposits on flood sheet, as this indicates needed adjustment of solution strength.

5) Automatic float valves should be operating to maintain proper

DAILY*	1st Week	2nd Week	3rd Week	4th Week	5th Week
1. Check solution					
2. Skim tanks					
3. Check nozzles					
4. Check flood sheet					
5. Check float box					
6. Clean lights					
WEEKLY**					
1. Drain tanks					
2. Recharge tanks					
3. Clean dry areas					
4. Apply booth mask					
5. Check fan belts					
6. Check motors and pumps					
MONTHLY***					
1. Purge water system					

This paint booth maintenance check chart shows what to do daily, weekly and monthly.

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Let us survey your needs and recommend the filler that will enable the finish on your product to make a base hit with your customers.

For additional information address 4732 Crittenden Dr., Louisville, Ky.

Rely on R

The problem of maintaining spray booths is ever present, and anyone who has the occasion to see booth installations quite often is impressed by the lack of proper booth clean-up.

I have suggested the paint booth maintenance check chart and it has worked successfully in numerous plants. In fact, several manufacturers of spray booths are using this method.

THE DU BOIS COMPANY

A. Gulino, Manager
Industrial Division

water level. (Water evaporation rate is estimated as being one gallon per hour per foot of spray booth length.)

6) Clean lights to give sprayers maximum visibility.

Weekly Maintenance Jobs

1) and 2) All tanks are drained weekly and charged.

3) and 4) All paint overspray shall be removed from the dry areas of booths and booth masking reapplied.

5) Clean fan blades and check fan belts.

6) Check motors and pumps.

Monthly Maintenance

1) Spray booths shall be chemically purged each month. Add stripping compound during final shift of month. Purging the booth the final eight hours will completely clean out the hydraulic system of the booth.

The check chart is printed and placed in an acetate envelope and hung at each water-wash spray booth. Each job is checked off after the maintenance shift. Each month the check chart is turned in to the plant superintendent.

This procedure must necessarily be revised to meet individual and specific plant conditions, but the general outline will be suitable and adaptable to most plant requirements.

The present day modern finishing department demanded by management includes a completely engineered and practical paint spray booth installation. It should follow that the best results will be obtained only when plants adopt an "engineered" spray booth maintenance program too.

Blake Paint Corporation

Formation of Blake Paint Corp. was announced recently by its president, Dudley B. Blake. Offices are at 103 E. 125 St., New York 35, N.Y.

Organized to supply industrial finishes, Mr. Blake stated that "personalized service" would be rendered to manufacturers of metal, wood and plastic items who use lacquers, synthetics, enamels, varnishes, thinners, wrinkle and hammer finishes and vinyl coatings.

Mr. Blake was formerly with other eastern firms that manufacture and sell finishing materials.

NACROMER is an excellent substitute for Pearl Essence where cost is a factor and where the high brilliance of natural pearl is not necessary.

It is—

- **Stable**
- **INERT**
- **NON-CORROSIVE**

Samples and literature sent on request.

THE MEARL CORPORATION

153 WAVERLY PLACE NEW YORK, N. Y.

"World's Largest Producer of Pearl Essence"

What Improved the Finish on Those TV Cabinets

By An Industrial Salesman

Here's a typical example of what happens when you skimp necessary workmanship before the application of each finishing material, and then try to make up for it in the rubbing operation—and the result of a change to the other extreme.

RECENTY I visited a customer who manufactures television cabinets. The type of finishing job that this cabinet manufacturer had previously turned out left much to be desired. The finish on his cabinets had pleased neither himself nor the firm for whom they were being made. It seemed that the rubbing was either insufficient, leaving too much grain showing through, or the rubbers "went through" the finish too often, especially around the edges. This resulted in costly rejects and in tie-ups in the repair department, with so much patch-work that the final finish looked unnatural.

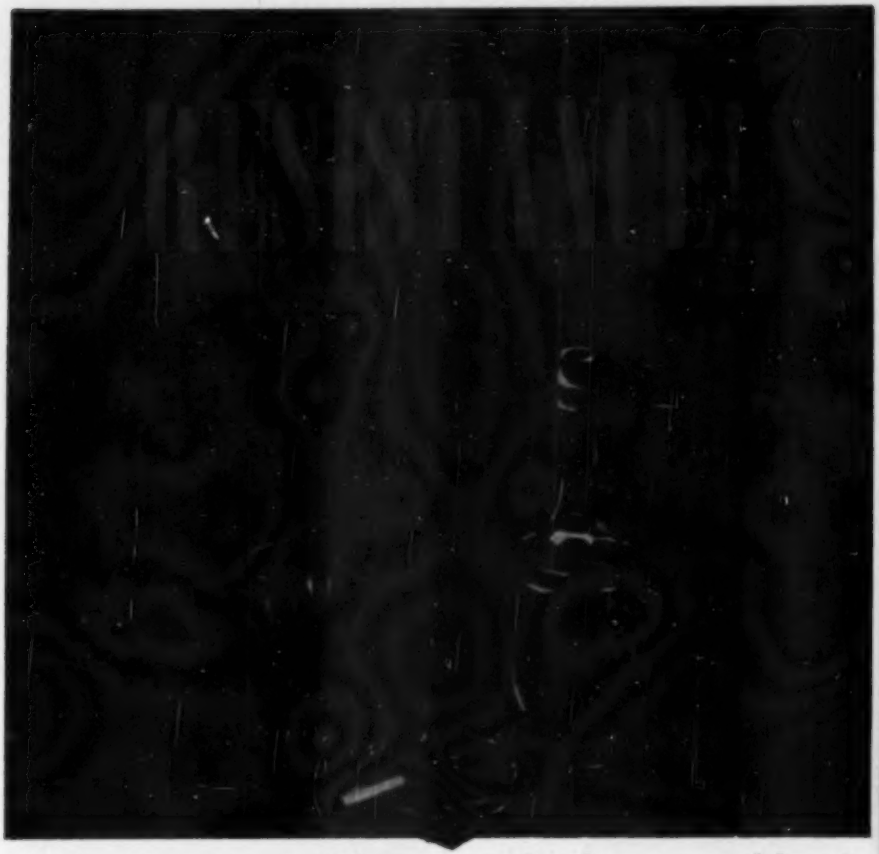
But at the time of my later visit I was pleasantly surprised to find a change for the better. Finishing operations were going along smoothly. The finish on the TV cabinets had that clear depth which characterizes an expensive finish. No congestion appeared around the repair stations; only normal shading and touch-ups were being done. Moreover, the management was happy.

Plant Manager Happy; Tells About Miracle

The plant manager was so proud of his "miracle" that he was happy to explain it. Previously their practice had been to apply each coat of finishing material, from stain to top lacquer, over the previous one, with practically no sanding between coats. Only the sealer coat was given a light "once over". This omission of sanding between coats produced a final finish so rough that, in rubbing it down, the rubbers invariably went through the edges. If, on the other hand, they stopped on the margin of safety, shrinkage made the finish look like a wash-board within a few weeks.

The former method was discarded in favor of a system of sanding before every coat. The results were so startling that sanding before each operation became a "must."

Before the final sanding in the white the cabinets are sponged with a thin sizing coat made up in the proportion of five gallons of alcohol



If that's your problem... make it our problem!

Kirker industrial finishes in both enamels and lacquers are based upon carefully compounded, fully tested formulas, to give maximum resistance to many elements, from cigarette burns to weathering— from alcohol to abrasion.

These basic formulas may be "tailored" to your exact needs—adapted to your <u>one</u> particular application in every detail, so that the requirements of even the most troublesome problem in finish resistance are met completely, quickly, economically.

An outline of the essentials of your problem will receive prompt attention.

Kirker CHEMICAL COMPANY

ONE EAST ELEVENTH STREET • PATERSON 4, NEW JERSEY

to one gallon of 4-lb. cut shellac. When this sizing coat dries it stiffens the fibers and contributes to smoother sanding. The sized surface also takes a more even application of stain. From here on, each handler who moves cabinets to the various stations has his sanding block or pad, plus a sheaf of cut sandpaper of the proper type. Each workman has been instructed thoroughly on how much sanding to do and how to do it. In most cases, only a little sanding is required, but that must be done skillfully and carefully.

Following application of N.G.R. stain, which is "cut" (or reduced) to secure good penetration without producing excessive darkening, light sanding with No. 320 production sandpaper removes any nibs or raised grain. This light sanding is followed by a sealer wash-coat which, when the surface is dry, can stand a slightly heavier sanding than the stained surface. Filler is applied and dried overnight. The filled surface is then sanded lightly before the sealer coat is sprayed on.

Make Surfaces Smooth As You Go and . . . .

Previous practice had been to flood on both the sealer and top coat, the theory being that these materials would flow into and fill all crevises and defects. As a result, the excessively wet coats softened the coats beneath them and dried slowly, with pronounced shrinkage. The sealer coat, being cloudy, obscured the clarity of the finish and also increased the risk of checking. Now, since there are no projecting nibs of either wood or filler, the amount of sealer that is sprayed on can be kept down to a minimum. It forms a thin but uniform film, which is desirable.

When the sealer coat is thoroughly dry, the cabinets are brought to a well-lighted area, placed upon padded rails, and are given a preliminary sanding with No. 280 production sandpaper folded over felt blocks. Then the dust is wiped off and any insufficiently sanded areas are finished up, holding the sandpaper in the hand instead of over a block. Inspection follows. Then comes touching up and burning in repairs of the most obvious defects. After this treatment, the cabinets are moved to a spray booth for shading. The shader also acts as a second inspector; any work that fails to meet his approval is sent back. No sanding is done between shading and the first coat of lacquer.

Technique in Spraying Lacquer Coats

On the first coat of lacquer great emphasis is placed on producing a smooth even flow rather than a heavy coat. First the top is sprayed; then the sides and front, care being taken that no overspray lands on a dry surface, requiring flooding to dissolve it.

Formerly it was the practice to spray the second and final coat within an hour or two of the first coat. Now the minimum drying time for the first coat of lacquer is four hours. However, before this final lacquer coat is applied, all flat surfaces are gone over with No. 360 wet-or-dry sandpaper folded over felt blocks. If conditions permit, a little mineral spirits is used. After all sanding operations, strict super-

BETTER USE

America's Most Imitated

FURNITURE FINISHES

IT'S AMERICA'S MOST SENSATIONAL LACQUER FINISH

If YOU knew what WE know about furniture finishes, *Perfection Finishes Would Be Your Choice.*

And NOW . . . PERFECTION offers LACQUER . . . FLATTENED BY SYNTHESIS . . . giving the MOST POSITIVE rubbed effect appearance . . . in grades to suit your pocketbook and drying time.

With these outstanding advantages

CLARITY OF GLOSS LACQUER EVEN IN LOWER SHEENS • WILL EITHER GLOSS OR DULL RUB • SMOOTHNESS • WON'T HAZE OR SWEAT BACK • LIQUOR PROOF • A WAXED FEEL

PERFECTION PAINT & COLOR COMPANY

715 E. Maryland St., Indianapolis 2, Indiana

Perfection SYNTHETIC FLAT FINISHES

WATER-PROOF LIQUOR-PROOF

vision insures a thorough and effective cleaning up with an air gun and tack rag.

For the final coat, the sprayer applies a medium wet coat to top, front and sides as before; then he goes over the entire piece again. This, in effect, assures full depth and coverage without risk of sags.

Saves 30% on Rubbing and 90% Fixing Rejects

While rubbing is the same standard procedure as formerly, it is estimated that the rubbing time now saved on each cabinet is 30%. The real saving, however, is in the great reduction of rejects and extensive repairs, these being reduced to a small fraction of their former proportions.

At first glance the system appears to be costly due to what seems to be a lot of handling and sanding, and the consequent slowing up of production. Actually, the saving on high-priced repair men and rubbers more than makes up for the extra men required to do so much sanding. More efficient use of floor space provides room for the longer drying periods. While daily shipments of cabinets are perhaps 5% less, this loss will be recovered as the system progresses. In the meantime, customer satisfaction is supreme, which assures continuation of the cabinet contract.

Binks Opens Larger Office in Milwaukee

Binks Manufacturing Co., makers of spray guns and industrial finishing equipment, announces the opening of a new and centrally located office at 2041 W. State St., Milwaukee 3, Wisconsin. The new office is approximately three times as large as Binks' former Milwaukee office and includes an attractive display room where Binks industrial spray finishing equipment is exhibited. The increased space was required to better serve the growing number of customers in this area. The new office is managed by H. J. Dueno who is well-known in the finishing field. Mr. Dueno directs Binks sales in Wisconsin, Michigan peninsula, Minnesota, North and South Dakota, and the northern parts of Iowa and Illinois.

Bede Sues Beck Equipment Co. and Dualheet, Inc.

On September 15, 1950 James A. Bede, President of Bede Products, Inc., Cleveland, Ohio, paint and air heating equipment manufacturer, brought suit in the Federal District Court, Cleveland, Ohio (CA No. 27692) against Louis Beck, Jr., Beck Equipment Co., and Dualheet Inc., all of Cleveland, whose paint-heating equipment the plaintiff stated infringed upon his patent No. 2,481,813 granted in 1949. This patent relates to a spray painting apparatus originally developed by Mr. Bede.

In the main, Bede seeks an injunction against further claimed infringements by Beck, Beck Equipment Co., and Dualheet Inc., and an accounting for profits and damages.

NEW PERIOD
Production Finishes
BAKING ENAMELS
LACQUERS SHELLAC
ENAMELS FILLERS
SEALERS SUPPLIES
PRIMERS STAINS
SYNTHETICS VARNISHES
It Pays to Specify
NEW PERIOD PRODUCTION FINISHES
• Fillers and Stains
• Lacquers—Clear and Semi-Gloss
• Sealers
• Lacquer Enamels—Flat and Gloss
• Synthetic Enamels
When you need a superior finishing job at low cost . . consider the advantages of New Period. They're top quality finishes . . . easier to apply . . . look better . . . last longer.
Write for 5 Gallon Working Sample at Drum Price
MANUFACTURERS OF FINE WOOD AND METAL PRODUCTION FINISHES
NEW PERIOD Production Finishes
ESTABLISHED 1917
NEW YORK WOODFINISHERS' Supply Co.
109 IMLAY STREET BROOKLYN, N. Y.

LABOR

Which way is the labor market going?

Are current events affecting your labor situation?

Is manpower again drifting to womanpower?

Is there security for your production regardless of shifting trends?

DeBurgh Conveyors can give you solid answers to some of those questions. Answers that have already been proven in the field.

None can tell what effect events will have on the labor market.

But you can provide production security, no matter whether male or female factory help will be predominant.

First, a complete DeBurgh Finishing System installation will reduce the amount of labor required.

Second, the patented features of the DeBurgh Conveyor assure "finger tip" control at all work stations permitting the performing of all activities with a minimum of muscular effort.

Women can efficiently perform any task throughout your labor day for there is no lifting or shoving or pushing or pulling that cannot be done with finger tips or a touch of the toe in revolving pallets mounting the heaviest work.

Inquire now, without obligation, and find out what a "tailored" DeBurgh Finishing system can do for the labor situation in your plant.

To expedite service to manufacturers on the Pacific Coast, DeBurgh Conveyors has opened an office in Los Angeles, California.

Inquiries directed to either address below will receive prompt attention.

Investigate!

DeBurgh Conveyors

Patented and Patents Pending

1741 K St. N. W.
WASHINGTON 6, D. C.

5600 Santa Fe Ave.
LOS ANGELES 58, CALIF.

Bewitching

. . . and there is something else that has a fascinating effect. A distinctive finish developed by our Creative Studio.

Such a coating can give new life and charm to your merchandise . . . it can bring out to the fullest the richness and styling of your diligent efforts.

Let us work hand-in-hand with you to produce a finish that will help do a real sales-winning job. Our creative service is available to reputable firms at no cost or obligation.

No Tampering with Quality

Affiliate
GORDON BARTELS CO.
Roller Coating Specialists

ROCKFORD VARNISH *Company*
ROCKFORD, ILLINOIS
Manufacturers of Protective and Decorative Coatings

BEAUTIFUL WOOD GRAIN EFFECTS
Produced with Filmwood

IN SOME OF THE factories that make nationally known radio and TV cabinets, furniture, etc., the beautiful grain and figure of rare and expensive cabinet woods is faithfully reproduced on plain wood, during the finishing process, by using a thin translucent film called "Filmwood". This thin film carries the exact reproduction of a figured wood, plus inlays if so desired, but it does not block out the prepared color (stained, bleached or natural) of the base surface to which it is adhered.

When the transparent film carrying the exact grain detail of a fine piece of figured wood is laid over a smooth, lacquer-coated, plain wood panel the plain surface takes on the appearance of the expensive master panel from which grained film was made. The natural structure of the plain piece of wood, showing through the applied transparent film, makes a realistically natural reproduction.

In addition to its use on plain wood panels, this film of reproduced grain can be used on sheets of metal, composition panels, plastic or glass—in fact, on any surface that will take a sprayed finish. No changes in finishing methods are required.

The grained film called "Filmwood" comes to the user in the form of a triple layer sheet. It is protected with a thin sheet of tissue paper which is backed up with plain heavy paper.

Grained Film May Have Inlay, Marquetry, Etc.

Both stock and custom-made graining designs are available. The grained film is at its best when it is designed especially for the product on which it is to be applied.

A master panel is made to the exact dimensions of the panel on which the grained film is to be adhered, plus a small allowance for trimming. Selected quality veneers

By CLYDE A. PETERSON, Industrial Designer

If You're Working in WOOD, METAL or PLASTICS

There's a SUNDSTRAND Portable Pneumatic Sander To Suit The Job

Here are three Sundstrand Sanders that will handle countless sanding jobs on wood, metal or plastics . . . on production or maintenance work. All three have straight line reciprocation, making it easy to follow grain structure and effecting superior finish. Vibration of all three sanders is reduced and operator's fatigue minimized.

Before buying any portable sander, investigate the savings possibilities of these Sundstrand Portable Pneumatic Sanders.

FREE DATA

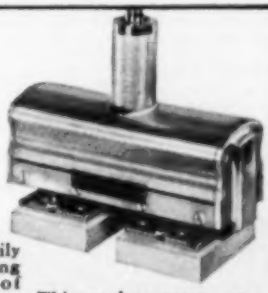
Investigate the savings possibilities of Sundstrand Portable Pneumatic Sanders. Write for bulletin 1F-58.

Single Pad
Model 100

A new Sundstrand Single Pad Sander which can be handled easily by women operators or in small and confining areas. Has straight line variable pad reciprocation ranging from 1,500 to 3,000 oscillations per minute. Pad movement is counterbalanced to eliminate vibration. Can be guided with practically no effort.

Double Pad
Model 1000 and Model 4000

Here's a light, fast, easy to handle two pad sander, ideal for wood, metal, plastic or composition. Pads reciprocate in opposed directions at 3,000 oscillations per minute . . . has abrasive area two to three times larger than hand blocks. Operates on 65 to 90 lbs. air pressure . . . applicable to both wet or dry sanding. Model 1000 weighs less than 6 lbs. and has stroke length of 1/2 inch. Model 4000 has 11/16" stroke and weighs approximately 9 lbs.



Heavy Duty Model

Designed primarily for pumice rubbing and sanding of large, flat surfaces. This sander operates at a speed of 1,100 oscillations per minute on an air pressure of 80 lbs. The machine weight of approximately 30 lbs. supplies necessary pressure for fast, uniform sanding or rubbing.

SUNDSTRAND MACHINE TOOL CO.
PNEUMATIC MACHINE DIVISION
ROCKFORD, ILLINOIS, U.S.A.

of fine figure are arranged in an attractive design. If special decorative effects are desired, such as inlay, marquetry, or banding, these are also included in the master panel.

The number of decorative effects is practically unlimited; these may include leather panels, marble surfaces, tooled gold lines, basket weaves and textile patterns. Three dimensional designs, such as bas-relief carving, may also be included and faithfully reproduced in two dimensions.

Preparation of Surface to Receive Grained Film

Basic plywood panels to receive the grained film may be made of plain mahogany, clear maple, birch, gum, poplar or other cabinet woods. The texture and grain of the face veneer or solid wood are important because after the surface is bleached or stained and brought up to the lacquer finish, and the grained film has been applied, the basic panel serves as the background color for all of the highlights in the "Filmwood" finish.

Naturally, the wood surfaces to receive a grained finish must be sanded perfectly smooth in the white. Then they are stained a light color. For example, on mahogany this basic color is much lighter than what ordinarily would be considered a mahogany stain. The ideal tone is easily established after a few trial applications.

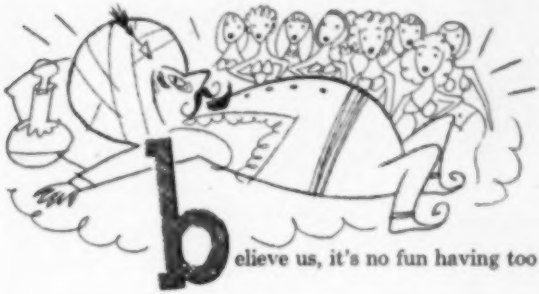
1) Applying laminating solution.

Wash Coat; Filler; Sealer; Lacquer—Plus Sanding

A wash coat made up in the proportion of two parts of thinner to one part of sealer is sprayed on to "hold" the stain. Then, for mahogany, the filler is applied, padded in and wiped off. Certain other woods (maple, birch, etc.) do not need filling, but it should be noted that where no filler is used, then the stain color must be established either from previous experience or by trial. If both stain and filler are used, then the color of these two in combination must be predetermined.

2) Filmwood is positioned on panel.

The filled surface is then sealed (a coat of lacquer sealer sprayed on) allowed to dry, sanded with No. 6/0 sandpaper, and one coat of lacquer is applied. When the coat of lacquer is dry the panels are lightly sanded again with No. 6/0 sandpaper and then blown clean with compressed air or wiped clean. [*To page 76*]



believe us, it's no fun having too much business.

We're swamped with orders—a dazing, devastating deluge. This is not due to war orders but to an accelerated rate of industrial and consumer buying.

Naturally, our regular, old-time customers come first. But, alas, everybody is out after us for material.

No one dislikes this embarrassing situation more than we do. We hope it won't last very long.

Our production men are working themselves to a frazzle to increase output. More material will be coming your way. Meanwhile, remember that we are treating everyone as fairly as possible.

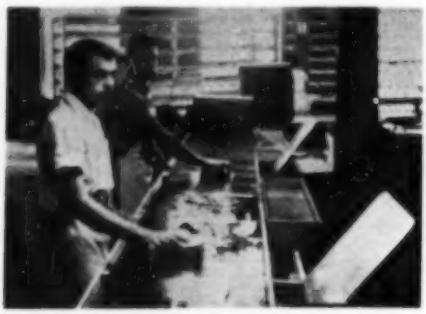
Remember, too, that we love you. For being angels of understanding and cooperation, we think you deserve a halo.

INDUSTRIAL CHEMICAL DIVISION
COMMERCIAL SOLVENTS CORPORATION
17 East 42nd Street, New York 17, N. Y.

3) Panel is run through pressure rollers.

4) Peeling off heavy backing paper.

5) Removing tissue from grained panel.



6) Washing surface of grained panels.

Technique of Adhering Grained Film to Panel

Now the panels are ready to receive the grained film. Material, supplies and equipment needed for applying the grained film include an adhering or laminating solution, a few sponges for applying it, and a pair of pressure rollers for pressing the film into close contact with the panel and pushing out the air from between the film and the panel so that later there will be no bubbles or blisters caused by entrapped air.

A dilution of approximately 30% W.F. laminating solution and 70% water is placed in a pan near the work. One of the sponges is dipped into this solution and carefully passed over the face surface of the panel to coat it uniformly. (The laminating liquid can also be applied by brush, spray or roller coater.) The composite "Filmwood" sheet is carefully positioned on the coated panel; then the panel and its grained film are run between rollers to put a uniform pressure on the grained film surface and permanently weld it to the lacquer-coated panel.

Removing Backing Paper; Top Coats of Lacquer

The heavy backing paper is removed immediately after the grained panels pass through the rollers. Removal is started by lifting a corner and then peeling off the entire sheet. It peels off easily. Then the panels are placed in racks to dry for 30 minutes. Following this interval of drying, the remaining sheet of tissue paper is removed by sponging it lightly with

TONE *polish** *gives you a brighter, harder finish at less cost!*

Look at the difference in the Toned and un-Toned table in the illustration. The higher gloss, richer sheen, greater depth gives the Toned table more sales appeal. You too, can give your product that extra sales appeal by using TONE Silicone-Base Polish. And you cut final finishing costs too! TONE is easy, quick to apply and is particularly adaptable to conveyor line production. Just spray or spread it on — and wipe it off! *No hard rubbing is required.* TONE retains its clarity! Use TONE Silicone-Base Polish . . . you'll sell more . . . cut final finishing costs . . . INCREASE PROFITS

* *Silicone-Base*

Make the TONE-*test*

Compare TONE with the polish you're now using. Prove to yourself that it gives your furniture a better, more saleable look. Write today, or use the coupon, for your FREE SAMPLE.

Yes, I'd like to try TONE at YOUR EXPENSE.
Send my FREE SAMPLE to:

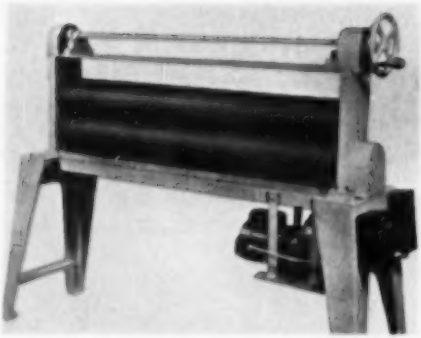
NAME_____ TITLE_____

COMPANY_____

ADDRESS_____

TONE MANUFACTURING COMPANY
710 Monroe Ave., N. W. Grand Rapids, Michigan

TONE *is used and endorsed by leading Grand Rapids furniture manufacturers.*



Power driven pressure rollers between which a panel and its applied Filmwood are passed.

clean water and wiping the surface dry. The grained panels are allowed to dry for about one hour

A coat of sealer is applied and the panel is then started through the assembly line ready for installation in the cabinet, at any desirable point. The pattern is visable during assembly operations.

By this system of grain reproduction the grained film becomes an integral part of the finish. It cannot be marred or damaged without marring the finish. Naturally the process has many possibilities in the decorative finishing of a variety of products made of several different materials.

Fine Organics Expands Sales

Fine Organics, Inc., 211 E. 19th St., New York 3, N.Y., announces its intention to enter the industrial and motor fleet market. To do this the Aviation Chemicals Division has been broadened in scope and will become the Aviation-Industrial Division and will continue under the direction of John B. Moore, who has been appointed General Sales Manager of Aviation and Industrial Chemical Sales.

The company announces the appointment of Arthur K. Meyer Co. of Los Angeles, Cal., to represent them in Los Angeles County. Sales offices are now located at 1206 S. Maple Ave., Los Angeles 15, Calif.

Lacquer & Chemical Expands Distribution

The Lacquer & Chemical Corp., announces the establishment of a program whereby they are setting up a nation wide plan for product distribution of their newly developed industrial finishes line. The company is located at 222 Fortieth St., Brooklyn 32, N.Y.

G. R. Varnish Corp. Honors Long-Time Employees

Four Grand Rapids Varnish Corporation salesmen were honored at the corporation's 35th annual 5-day Sales Convention in Grand Rapids. Howard C. Lawrence, president of the firm, presented sterling silver coffee services to Jack Balkema of Grand Rapids, and to Charles Thompson of Bennington, Vermont, in recognition of 25 years of service with the company. Two other salesmen—Arthur S. Heberer of Chattanooga, Tenn. and Wilson H. Towns of Buffalo, N.Y. were presented illuminated service plaques commemorating ten years of service each with the corporation.

Jack Balkema (center) is presented with a sterling silver coffee service by the firm's president Howard C. Lawrence (left) and vice president Joseph A. Hager (right).

Balkema started with GRVC as an office worker in 1925, advanced to become head of the Cost Accounting Department, and in 1941 was transferred to the sales force. He has been handling the Grand Rapids and Western Michigan territory since then.

Charles Thompson, prior to his association with the Corporation in 1925, was a finishing foreman in Bennington, Vermont. He has represented the Grand Rapids firm in the New England territory throughout his 25 years of service.

Your product is a *football!*

It's apt to get kicked around . . . thrown . . . dropped. That's one reason why . . . like a football . . . its "cover" is important. Whether your "cover" coats air or heirlooms, it's one factor that enables your product to stand up . . . that keeps you in the game.

A durable "cover" by Stanley does just that, because our chemists work hand-in-hand with your design engineers to discover the specific finish to do the specific job: that is, make your product look better and last longer.

Our emphasis at Stanley on "special finishes for special applications" has already helped many manufacturers to build sales. We'd like to help build yours. Write us about your finishing needs today: The Stanley Chemical Company, East Berlin. Connecticut.

STANLEY

Industrial Coatings

STANLEY CHEMICAL

LACQUERS SYNTHETICS JAPANS ENAMELS

Fishing Tackle Article

Some time ago, in *Industrial Finishing*, there appeared an article on the finishing of fishing tackle. We do not seem to be able to locate that particular item in the back issues which we have checked, and wonder whether a photostat or a reprint of the article is available. If so, we would appreciate having it sent to us as soon as possible.—*T.C.Co.*

Time flies. The article to which you referred appeared in May 1948 issue. Tear sheets of that article are being sent to you.—*Ed.*

Flock Article Wanted

Would it be possible to get one or more extra copies of your August 1950 issue? We are particularly interested in the very good article on "Flock" which begins on page 60 and ends on page 80. The writer is now handling the line of the Arndt-Palmer Laboratories, Inc., for export which, as you perhaps know, is a line of appearance reconditioning materials for the interior of cars. Along with this line, we sell flock.

This particular issue of your magazine could be used to very good advantage, if it is possible to secure some extra copies. — *B.-W. International Corp.*

We are happy to be able to send you two extra copies of August issue.

Gold Lacquer for Brass

We are interested in securing a gold color lacquer for use on polished brass. We will appreciate any information you can give us as to where this type of material can be secured.—*K.I.*

In a letter we are giving you several sources of supply.—*Ed.*

Tumble Finishing

I have read your article about Tumble Finishing and would be very much obliged to you if you would send me a copy of "The Technique of Finishing Small Wood Turnings, etc., by Tumbling". — *Carl Kurt Walther, Wuppertal-Vohwinkle, Germany.*

Copy of the reprint being sent.—*Ed.*

For Filling Holes in Wood

In the August 1950 issue of *Industrial Finishing*, one of your "Reader's Letters" concerned filling holes in wood (page 88). In reply, you stated that there were three companies in Los Angeles who are concerned with these patching compounds.

Since we are quite interested in this instance, we would greatly appreciate any information you might be able to supply us concerning materials and also the names of the companies mentioned.—*E.C.Co. (Chicago).*

The reader who made the inquiry is located in southern California, so we suggested sources of supply in Los

DESIGNED AND ENGINEERED TO DELIVER *TOP* PERFORMANCE

Original layout, design, and engineering goes into every Balsa installation. No two production schedules are identical. There are many problems and variables to be studied and engineered before the manufacture and installation of a Balsa system. Results are the essence of any job. Here are just a few comments by leading furniture manufacturers:

● "No doubt you are interested in knowing about the conveyors your company installed. They have been operating regularly and have given us very little trouble. However, wish to state that originally we had two finishing rooms and two cabinet rooms and since your conveyorization into one finishing room and one cabinet room the system has worked out very satisfactorily and has made us many savings. I believe if we had not made this conveyor installation we would not be in business today and for the engineers who did the work, can say nothing but the best as they carried out their work to the letter. For anyone who has a volume business, I would certainly recommend it."—B. JOHN, *President,* B. P. John Furniture Corp., Portland, Oregon.

● "At this time, we are glad to report on the operation of the conveyor system installed by you in our finishing department. We are very much pleased with the results now being obtained and are sure that we will continue to improve by further systematizing on our part. We are now taking off the line each day, five-hundred to seven-hundred pieces of assorted sizes from end tables to breakfront secretaries, and our big fear that the line could not be made adaptable to such a variety of merchandise we now admit to having been imaginary. On the cheaper end of our line we were never able to use the same finish on the better end because of the cost of getting these pieces to and from the spray machines and the time and space required for same. We are now using wiping stain finish on all pieces regardless of price so that we have greatly increased the quality of our finish and at a noticeable decrease in cost. Another great benefit is the enormous additional storage capacity given us for finished product. Also, the fact that pieces come from our cabinet department and are ready for the stockroom in a few hours is quite valuable in many ways. In the old days we hardly knew when to promise shipment on tables being built because of the fear of loss of time from one operation to another, but now it is a different program which cannot go wrong. We have no hesitancy in telling you that we are sold on the conveyor, our only regret being that the installation was not made earlier."—C. A. NAUGLE, Peerless Furniture Co., Inc., Shippensburg, Penna.

Development Engineers and Designers of Original Furniture Conveyor Installations

BALSA, Inc.

122 EAST 42nd STREET, NEW YORK, N. Y.

Angeles. In a letter we are naming five concerns in your city (Chicago) who can supply what you want.—*Ed.*

Synthetic Pearl Essence

WOULD APPRECIATE SUPPLIERS NAMES SYNTHETIC PEARL ESSENCE. PLEASE WIRE COLLECT IF YOU KNOW OF ANY.—CAMEO, INC.

Try The Mearl Corporation, 153 Waverly Place, New York, N. Y. Also Argenta Products Co., Eastport, Maine.—*Ed.*

"Cronak" Found

In the September 1950 issue of *Industrial Finishing*, page 82, there appears an inquiry as to who makes "Cronak". This material is a product of the New Jersey Zinc Co., 160 Front St., New York 7, N.Y.—*H. J. Boll, A.M. & F.Co.*

Gold and Silver Leaf

Please send me name and address of a company or several companies that sell gold and silver leaf.—*W.C., Costa Mesa, Calif.*

Try the California branch of H. Behlen & Bro., Inc., Santa Monica, Calif.—*Ed.*

Fluorescent Paints

In the July 1950 issue of *Industrial Finishing* we read, on page 82, a question on Fluorescent Paint, and we shall be pleased to receive the same information as Messrs. D.L. Mfg.—*P.S. & Z. Ltd., Zaandam, Holland.*

We are supplying the information by letter.—*Ed.*

. . . Gallon of Paint Worth?

The August issue of *Industrial Finishing*, carried a very interesting article beginning on page 24, dealing with paint purchases. Unfortunately, our copy of the magazine has been misplaced and we are unable to include the title of the article.

We would like very much to have a dozen copies of the articles referred to, and hope you will be in position to furnish them. Incidentally, we believe the author has done a very excellent job and should be complimented.—*J. W. Cleaveland (DuPont in Atlanta).*

. . . We were very much impressed with this article and are wondering whether or not reprints are available. If so, we would greatly appreciate receiving 30 reprints.—*H. P. Wertman (Glidden at Reading).*

We are anxious to obtain approximately 50 reprints . . . Are they available?—*S. M. Low (Atlas Powder Co.)*

. . . We are pleased to inform you that in our opinion the article was well written and the basic philosophy is similar to that which we, in our company, emphasize. We would be interested in obtaining approximately 40 copies of this article . . . *B. F. Ames (Maas & Waldstein Co.)*

We are interested and would like to know if it is possible to get some reprints . . .—*National Lead Co.*

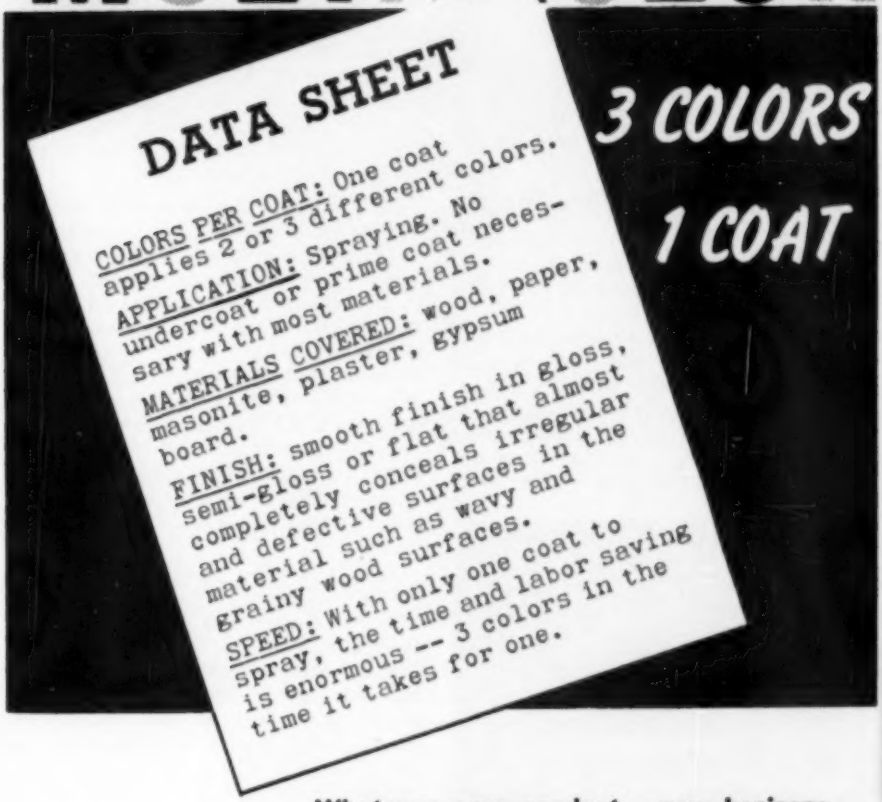
We would like six copies of the article.—*F. T. Rice, The Pure Oil Co.*

Reprints are being made.—*Ed.*

Flock: It's Great

I have just read the article on "Flock" in August 1950 issue of *Industrial Finishing*. It's great. Can

MULTAKOLOR


DATA SHEET
COLORS PER COAT: One coat applies 2 or 3 different colors.
APPLICATION: Spraying. No undercoat or prime coat necessary with most materials.
MATERIALS COVERED: wood, paper, masonite, plaster, gypsum board.
FINISH: Smooth finish in gloss, semi-gloss or flat that almost completely conceals irregular and defective surfaces in the material such as wavy and grainy wood surfaces.
SPEED: With only one coat to spray, the time and labor saving is enormous -- 3 colors in the time it takes for one.
3 COLORS
1 COAT

Whatever your product — new horizons for color are opened. 16 attractive color combinations to choose from. Combinations can be made to order for volume users. Investigate! Write today for complete details.

PAINTS · SYNTHETICS UNITED LACQUERS · ENAMELS

United LACQUER MFG. CORP.

LINDEN, N. J. EVERETT 52, MASS.

PHILADELPHIA 19, PA.

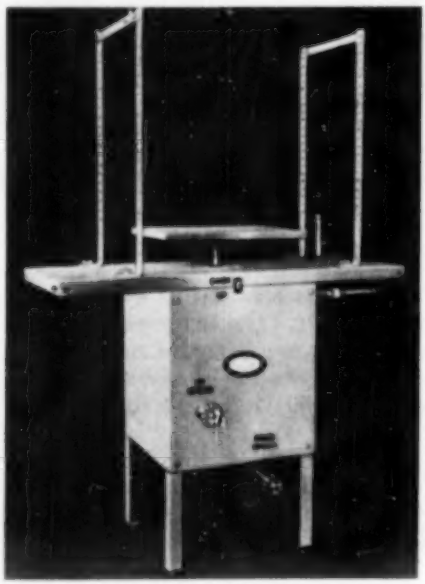
you supply me with 25 copies or reprints? If you can't furnish reprints, can you supply me with 25 copies of the whole August issue, which will serve the same purpose? I am willing to pay for them.—*E. H. K., Flock Finishes.*

Fortunately, the printing department produced extra copies of this issue, so we can accommodate you.

We Make Dipping Machines!

We note, in Sept. issue of *Industrial Finishing*, on page 84, an inquiry concerning a dipping machine suitable for finishing small articles.

Dipping of small articles with an automatic machine has been a specialty with us for the past five years. We have had considerable success in the manufacture of machinery for dipping numerous small articles requiring one dip coating or multiple dip coating, either in clear finish or colored finishes.—*Bixby Machine Co., Inc., 1731 N. 8th St., St. Louis 6, Mo.*



Maas & Waldstein dipping machine.

We feel certain that our hydraulic dipping machine will serve the purpose of your reader and, as a matter of fact, it may be of interest to other fabricators of small parts where dip application is practicable. Our hydraulic dipping machine utilizes a technique that has proved highly successful by its many users.

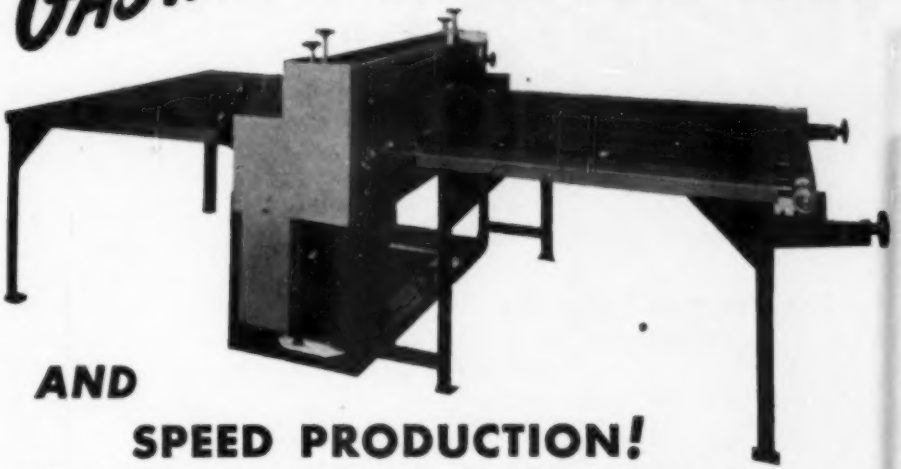
We refer to the *method of holding the parts to be coated in a stationary position and conveying the dip tank and coating material to the parts.* This method tends to eliminate runs and striations in the finished parts; generally caused by vibration and movement of those parts. Many manufacturers of pearl beads and other small novelty items, including vanity cases, are using this hydraulic dipping machine with continued success.—*Maas & Waldstein Co., 438 Riverside Ave., Newark 4, N.J.*

We have been building fully automatic dipping machins for work other than finishing, and believe we have something to offer the finishing industry. However, before making any general announcement, we would like to contact some of the prospective users, learn their requirements and see if we actually do have what they need.—*Hard and Co., Inc., Ann Arbor, Michigan.*

Plaskon Coating Resins

The establishment of a new Coating Resins Department under the direction of Carleton Ellis, Jr., as manager, has been announced by W. W. Knight, Jr., general manager of the Plaskon Division, Libbey-Owens-Ford Glass Co., Toledo, Ohio. The new department will include all operations connected with the development, manufacture and sale of Plaskon coating resin products. Plaskon coating resins are widely used in the manufacture of paints, lacquers, varnishes and other finishing materials.

GASWAY ROLLACOAT FINISHERS CUT COATING COSTS



AND SPEED PRODUCTION!

The benefits to be gained by using the Rollacoat method of applying finishes and protective coatings, to practically any type of flat materials, are three-fold. In the first place coating speeds are greatly increased over those of any other method and are governed largely by how fast the coated materials can be handled or dried. Secondly, the coverage per sq. ft. per gallon is usually at least 50% greater, the only loss being the paint removed from the rolls at the end of a run. In the third place you obtain finer quality of finish due to accurate control of thickness and evenness of coat.

The applications for Rollacoating are numerous. Top, bottom and sides of practically any type of flat material, whether sheet or coil stock, can be coated by a single pass through the machine.

Special equipment for cleaning, treating, coating, drying, and rewinding strip in continuous process can be constructed to special order.

GASWAY CORPORATION

Write or wire today for the 12 page Gasway illustrated book describing Rollacoat Finishers, their possibilities and limitation.

6463 No. Ravenswood Ave.
Chicago 26, Illinois

Rubbing and Polishing Furniture

We manufacture a line of dining room furniture. Our buffet tops and table tops are now all being finished, rubbed and polished to what we formerly termed a piano polished finish, which is a high sheen. We are interested in learning what would be the best method of rubbing and polishing these buffet tops and table tops.

At the present time we are using S———— air driven rubbing machines and we are using a circular motion buffing and polishing wheel. This system does a very fine job, but it would seem that it is entirely too slow. Perhaps someone has a better method. Can you help us in this matter?—*B. Furn. Mfg. Co.*

We have visited some up-to-date furniture factories and have seen these same methods used. Of course, not everyone does that extra buffing job, but buffing does give the furniture a very fine smooth surface.

As you probably know, the rubbing operation can be made easier and quicker if the surface being rubbed is quite smooth to begin with. Contributing to this smoothness would be smooth sanding in the white and fine light sanding between coats as the finish is built up through staining, wash coat, filling, sealer coat, intermediate coats and top coat, each followed by proper drying. The flow-on of each coat should produce a smooth film too (no orange peel, runs or sags).—*Editor.*

The following method is being used successfully in our six plants:

Wet sand with No. 320 wet-or-dry sandpaper, using the same make of air-driven portable sanders you mention, with rubber cushion pads. For a rubbing lubricant, we use Bay Oil D (Standard Oil Co.). This is a light-bodied greaseless type of oil which cuts much faster than conventional type paraffin oils, even when they are reduced with mineral spirits. It doesn't cause a "haze" on the furniture, as do some other rubbing oils. After rubbing with No. 320 wet-or-dry sandpaper, follow this with No. 360, then No. 400 wet-or-dry sandpaper, using the same machines and method as described above. Sandpaper cuts much faster than pumice stone. Be sure to rub with the grain of the wood.

Follow wet sanding with an air-driven feld-pad rubbing machine, using the above mentioned rubbing oil as a lubricant and a polishing powder made up in the proportion of three parts polishing powder (Tripoli) to one part of 4F pumice stone. Rubbing with this mixture removes abrasive marks left by wet sanding.

Wipe off all traces of the rubbing compound, so the surface is clean; then go over it with a portable rotary buffing wheel. We use a coarse buffing compound, mixing it in the proportion of two parts water with one part compound. This helps to remove all abrasive marks left from any of the preceding operations.

Follow this by going over all moulded surfaces with a hand-rubbing compound, using a small soft hand pad and rubbing briskly with the grain of

Ease of Operation...

SPEEDS PRODUCTION

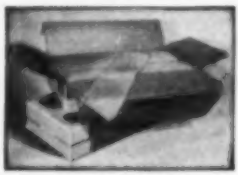
"Mity-Midget"
Weighs 4 lbs.
Costs $79.50

Though powerful and fast, National Sanders have a minimum of vibration because of a patented counter-balance system. The Model 400, "Mity-Midget", has a 3/16" orbital stroke at from 5000 to 6000 rpm. Its operation is smooth and effortless with no tendency to dig or gouge. It is light-in-weight...and features a comfortable grip that fits the hand naturally. Your finishing room employees will be able to produce superior work in the shortest possible time with National Sanders. Write for details today.

NATIONAL AIR SANDER, INC.
2818 AUBURN ST., ROCKFORD, ILLINOIS

NOW! Tack Cloth in Handy Rolls *or* Cut Bulk

Cut off any size piece and use as needed.



Already cut and folded, ready to use.

Now you can get Tack Cloth packed the way it's easiest for you to use—either in 150 yard rolls of 36" wide cloth or in handy cartons—100 or more Tack Cloths to the carton.

No matter which way you buy it, you can be sure that every square inch will stay SOFT and TACKY until the very last bit is used up.

The Cut Bulk size is 18" x 36"—folded to 4½" x 18" for easy handling. **All of our Tack Cloth is Spontaneous Combustion-Proof, Lint-Free and Wax-Free.** It's clean and sanitary—there's no waste.

Write today for complete information, prices and samples.

Baughn Chemical Products Company

"The Tacky Wiper Specialists"

7027 N. RAVENSWOOD CHICAGO 26, ILL.

Also Individually Packed in Glassine Envelopes —144 to the Carton.

A WARRANTY OF SATISFACTION IN EVERY CARTON

the wood. Using the hand compound on tops, after machine buffing, will also help to raise the final polish to a higher sheen.

After cleaning off the hand compound, use a mild soap and water solution to clean the surface thoroughly. Then polish all over with "no haze" furniture polish. This is a high grade grease-free polish which leaves a bright clear protective film on the polished surfaces. Another good feature of this polish is that it prevents "bluing" and "hazing" of the finished product, which so often occurs after the furniture stands for a few days following rubbing. This is particularly true of mahogany finishes. This polish also prevents finger marks on the polished surface. It is a new product developed by a local concern three years ago.

After the polished surfaces are wiped clean, go over all surfaces with an air-driven rotary buffing wheel, using a soft lambs wool buffing bonnet and a fine abrasive polish. We use Synthetone polish, mixing two parts water with one part polish. We sprinkle a few drops of this mixture from a perforated-top can onto the surface. Then apply the buffing wheel. The method here described is very fast and it also leaves a smooth highly polished surface that is free from abrasive marks, finger prints, haze, etc.—[*Supervisor of Finishing.*]

Rinshed-Mason Buys Plant in California

The Rinshed-Mason Co., Detroit, Mich., has purchased the former Caltone plant, located on a 4-acre site at 1440 N. Lemon St., Anaheim, Calif. The property will be converted to the manufacturing and warehousing of automotive and industrial finishes, automotive refinishing materials and allied products.

Headquarters of the company will continue to be in Detroit.

Finishing Ukuleles

Our principal problem in finishing ukuleles is to obtain a finish on mahogany, using a type of colored filler which can be economically applied.

Furthermore we are interested in obtaining information concerning the proper lacquers to be used which would require a minimum amount of rubbing and still give the desired high finish effect.—*G.R.Co. (Calif.).*

My first suggestion is that you contact some manufacturer of wood finishing materials in your area for aid on your specific problem. These manufacturers have service men who can work with you on colors.

With reference to your problem of obtaining a finish on mahogany with a colored filler, I might suggest that it is usually necessary to stain the wood first. After the staining operation (and drying), the wood is wash coated, allowed to dry, sanded lightly and then filled with a mahogany filler. A combination filler-stain might be satisfactory on your work. Your supplier can tell you about these materials.

As to the lacquers, I suggest that a suitable system would be one coat of lacquer sealer and three coats of gloss lacquer in a solids range of 20% to 25%. To get a high polish effect, it will be necessary to rub and polish this finish. Your local supplier can recommend specific materials that will do the best job for you.—*H.H.*

Horrell Co. Now Represents Sly Mfg. Co. in L. A., Calif.

The W. W. Sly Mfg. Co. of Cleveland, Ohio, has appointed the Horrell Co. of 8006 Melrose Ave., Los Angeles 46, Calif., to act as sales engineers for the Sly line of industrial dust control and sandblast equipment. The Horrell Co. has been established in Southern California for a number of years as consulting engineers and distributors of engineered products and equipment.

Test
Abrasion
Resistance
Taber
ABRASER
Model 140
New instrument to test wear resistance of fabrics, protective coatings, plating, plastics, rubber, etc.
Incorporates proven rotary rub-wear action of dual abrading wheels, simulating wear under actual service conditions.
Write for new literature
TABER INSTRUMENT CORP.
108 Goundry St. North Tonawanda, N.Y.

Automatic Spray-Bake Equipment

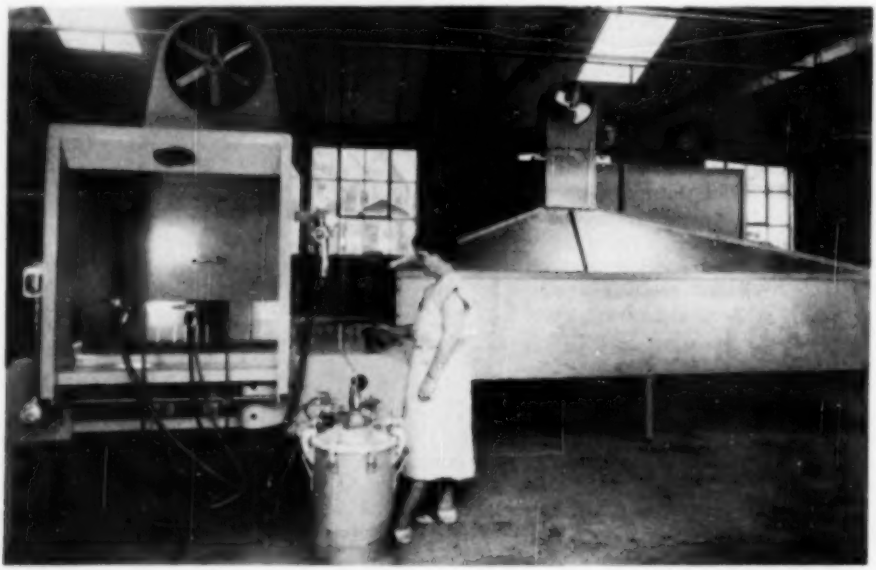
A complete conveyorized machine for automatically spray painting and baking the enamel on small metal, wood or plastic parts, offers high speed production and uniform quality finishing.

The conveyor chain carries vertical spindles spaced equidistantly apart; these spindles serve as work holders. Other types of work holders can be devised if needed.

Speed of the conveyor can be regulated to suit the type of work being sprayed and baked. One, two or three spray guns can be set up in front of the booth to spray articles in production. Spraying is automatically stopped except when work in process is in position to be coated. A built-in exhaust system removes overspray and fumes.

Following spraying, a short flash drying period is provided before coated work enters the electric oven. Forced air circulation in the oven removes the fumes and foul air produced by high-heat baking. Many variations in the setup can be arranged to suit the requirements of different kinds of work.

The machine is a product of The Capitol Machine Co., Danbury, Conn.



A conveyorized automatic spraying-baking setup that is adapted to coating small articles.

BE FRESH!
STAY FRESH!

for Dust Protection
wear a DUPOR No. 4

The ideal twin filter respirator to keep sawdust, silica dust, grinding compounds out of nose—throat—lungs! A favorite protection for paint spray, fumes, gases, vapors, etc. Rubber face mask provides airtight fit, controlled breathing, panorama view, no blind spots.

COVER'S GAS-TIGHT FOG-PROOF GOGGLES **$1.65**

Sample sent $1.65 pp

H. S. COVER, South Bend, Ind.

Mac's

FASHION BLEACHING LACQUER

Is "water white" in color . . . can be applied by brush or spray. Highly recommended for extra light or blonde finishes. Can be coated over with MAC'S Filler or Glazing Stain.

Produces a lighter finish when applied directly over bleached, sanded and dusted wood. Prevents the oil in filler or stain from causing a darkened color.

Write for samples and descriptive folder.

The Lawrence-McFadden Co.

Headquarters for Fine Finishes Since 1875

7430 STATE ROAD *"Our 75th Year"* **PHILADELPHIA 36, PA.**

Tack-Off Dust, Grit and Lint with a "DUST-ALL" Tack Rag before finishing

Specks of dust, grit and lint accumulating on surfaces to be finished, cause blisters and blemishes when painted over. For only a few pennies per job, your finishing department provided with "Dust-All" Tack Rags to wipe off, collect and hold this objectionable matter, can be assured of fine finish jobs.

Ask for further information on "Dust-All" Tack Rags for industrial use and for a sample.

Be sure to get the Tack Rag that comes in the Red Checkered Bag.

HARDING Manufacturing Co.
10620 Gratiot Ave., Detroit 13, Mich.

Removes Nickel, Tin, Chromium From Copper-Base Alloys

Enthone, Inc., Dept. IF, 442 Elm St., New Haven, Conn., announces the development of a new product for the rapid stripping of nickel, tin, lead and chromium from copper, brass and other copper alloys without attack upon the base metal. The process involves no electric current. The work to be stripped is immersed in an acid solution containing Metal Stripper N-165, and rapid removal of nickel and the other metals is accomplished. The process is ideal for removal of nickel from bulk plated work, as well as heavier plated objects, such as percolators, flashlights, plumbing goods and other items made of copper. It is also suitable for rapid removal of nickel and chromium from tips of plating racks, thus reducing overall maintenance costs on plating racks.

The process is simple to use. One pound of Enthone Metal Stripper N-165 is added to each gallon of acid solution. Stripping can be done at room temperature or at higher temperatures if faster stripping is desired. The process is not suitable for removal of nickel from steel or zinc base alloys. Enthone's Metal Stripper "A" is recommended for removal of nickel from steel without attack.

Section-Lock Roller Conveyors

Just placed on the market by Steel Parts Mfg. Co., Division of Blackstone Mfg. Co., Inc., 4630 W. Harrison St., Chicago 44, Ill., is the new Metalok roller conveyor.

Featured is a new type coupling and lock which has, as its principal feature, speed and ease in attaching one length to another and then locking them in place with a positive grip. Truly a Metalok.

New Process Prepares Aluminum for Paint

A patented process that has been in use by the Pyrene Mfg. Co. in both Great Britain and America for a number of years is now being offered to others for the protection of aluminum.

This "Pylumin Process," as it is called, accomplishes two things. It gives an attractive coating definite corrosion - resistance value if no paint finish is applied. In addition it provides an adhesive and efficient base for paint finishes.

It is claimed that Pylumin is simple to operate since it is an immersion process and employs a single powder the ingredients of which have been proportioned and pre-mixed. As a result there is no chance for error such as might occur if separate powders had to be proportioned, weighed and mixed in a certain order. In addition, the solution is easily maintained by use of a simple Pylumin test kit and, when necessary, by the addition of the single powder.

Ordinary heated steel tanks are required. Unless there is an exceptional amount of grease and dirt on the parts to be processed, no special cleaning is required in advance; the cleaning and processing can be done in one operation.

The process is adaptable to either large or small scale production and it can be used on widely varying products made of aluminum and aluminum alloy.

The Pylumin process does not require a license but simply the pur-

Some of the Products Our Machines Now are Finishing

- Screw drivers, chisels, pliers, saws, wrenches
- Fine silver—knives, forks, spoons
- Cigarette cases and lighters, compacts, mirror and brush backs
- Surgical instruments
- Fan blades, flat iron sole plates, photogravure stock

We have the answer

TO YOUR SURFACE FINISHING PROBLEM!

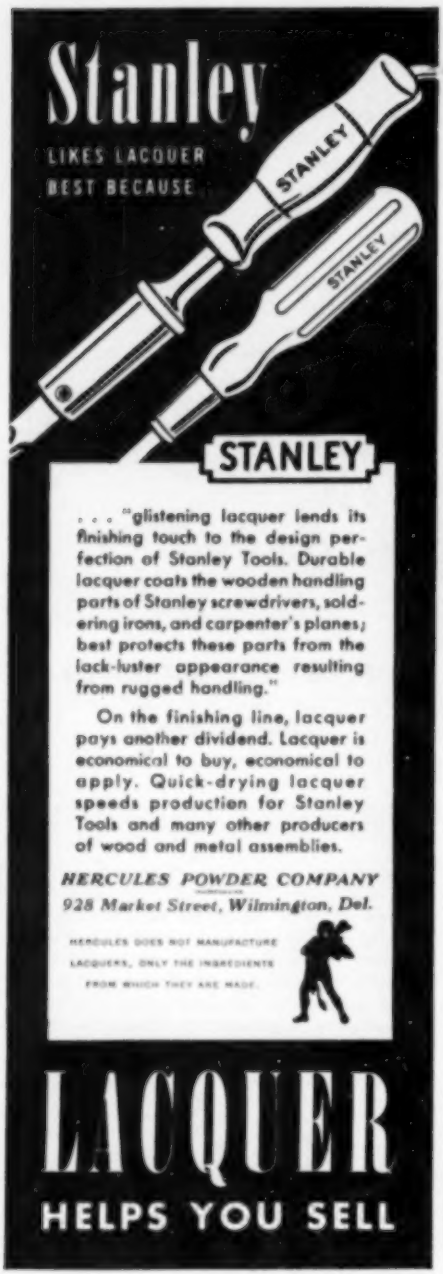
For flash removal to mirror finish . . a Clair Surface Finishing Machine may be the economical solution to your small product finishing problems. From the seven extremely versatile basic designs, a "custom-made" machine may be developed for your particular application. *Write for technical data.*

CLAIR

MANUFACTURING CO., INC.

Specialized Machine Equipment For Glazing and Polishing Operations

OLEAN, N. Y.


Stanley
LIKES LACQUER
BEST BECAUSE
STANLEY
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STANLEY
. . . "glistening lacquer lends its finishing touch to the design perfection of Stanley Tools. Durable lacquer coats the wooden handling parts of Stanley screwdrivers, soldering irons, and carpenter's planes; best protects these parts from the lack-luster appearance resulting from rugged handling."
On the finishing line, lacquer pays another dividend. Lacquer is economical to buy, economical to apply. Quick-drying lacquer speeds production for Stanley Tools and many other producers of wood and metal assemblies.
HERCULES POWDER COMPANY
928 Market Street, Wilmington, Del.
HERCULES DOES NOT MANUFACTURE LACQUERS, ONLY THE INGREDIENTS FROM WHICH THEY ARE MADE.
LACQUER
HELPS YOU SELL

chase of the Pylumin chemicals and Pylumin test kit supplied with full instructions for installation and operation from the Pyrene Mfg. Co., Metal Finishing Division, 10 Empire St., Newark 5, New Jersey.

Dremel Electric Sander-Polisher

Dremel Mfg. Co., Racine Wisc., announces a companion model to its present electric Sander-Polisher. The new and larger Model 2000 is expected to meet the heavier requirements of industry.

This new sander-polisher weighs only 5-lbs.

This latest Dremel machine delivers 14,400 sanding strokes per minute using a straight-line, reciprocal action principle. It has only two moving parts; oil-less bearings; light weight of 5-lbs., and a cam-type paper holder which permits rapid changing of abrasive paper.

Nox-Rust Bulletin Free

Protection against rust for metal parts during manufacturing, in storage and in transit, is discussed in a new four-page bulletin recently offered by Nox-Rust Chemical Corp., 2423 S. Halsted St., Chicago 8, Ill. The bulletin covers the company's Nox-Rust 310-AC which removes fingerprints and deposits a thin, transparent film. Application is made by brushing, spraying, or dipping at room temperatures.

RONCI SPEEDIP WHIRL ENAMELER

Made in Two Sizes, R-100 and R-200 Capacity 312-cu.in. and 1206-cu.in.

IDEAL FOR LACQUERING AND ENAMELING SMALL PARTS UP TO 7-IN. IN LENGTH

CUTS COSTS, SAVES UP TO 80% OF MATERIAL

Carries up to 75-lbs. per load, and up to 30 loads per hour can be coated with lacquer or enamel in these machines.

All operations are within the machine. Dipping tank is raised, submerging the parts in the basket, and then lowered and the parts whirled, throwing off excess material. No additional outside tanks required; no cleaning necessary when changing colors; no loss of material.

PROMPT DELIVERIES

Write for further information and submit samples to be coated.

RONCI MACHINE COMPANY

A Division of F. Ronci Co., Inc.

2 ATLANTIC BOULEVARD CENTREDALE 11, R. I.

New Fast-Drying Plastic Synthetic Finish

A clear, fast-drying plastic synthetic finish, Base VC-38, designed particularly for use on trim and hardware made of brass and other metals, has been developed by the United Lacquer Mfg. Corp., Linden, N. J.

The new vinyl finish may be used with good results on iron, copper, gold, cadmium, chromium and nickel, in addition to brass. It may be tinted to give a gold or brass appearance to steel or aluminum.

Chief merit of the new finish is its fast drying time. The coating has excellent durability and resistance to perspiration, handling, marring and tarnish. Base VC-38 gives good adhesion, excellent hiding and flowing qualities. It will air dry sufficiently to handle in about 30 minutes and it will air dry hard overnight. When baked for ten minutes at between 200° and 250° F. in a gas oven or under infra red lights, it will dry hard in ten minutes.

The new finish may be applied by the dip or spray process. It is available in either a satin or flat finish. A special thinner, Base VT-39, has been prepared to reduce Base VC-38.

Cedar Spray in Clothes Closets

Maas & Waldstein Co. (Newark, Chicago & Los Angeles) manufacturer of lacquers, enamels and synthetics, announces a new and special type of coating known as "Ceda-Sprae." This coating was developed for use on the interiors of closets, chests and other containers for clothing and textiles, the inside of paper garment bags and even ordinary paper bags, as well as chests and other containers used for over-season storage.

Ceda-Sprae imparts a forest-fresh

you save when you use

LIQUID ENVELOPE
PEELABLE

SPRAY-BOOTH COATING

Spray on in minutes—peel off with all accumulated overspray in minutes. No more time-consuming scrape-downs; no more paper, grease, etc. Firesafe. Economical. Used in hundreds of plants.

Order a 5 gallon Test-Sample at the drum lot price.

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General Spray Equipment Co., Boston, Mass. • Bay State Equipment Co., Springfield, Mass. • Lea Manufacturing Co., Waterbury, Conn. • Edgcomb Steel of New England, Milford, Conn. • Kellerman Paint Co., New York, N. Y. Grapek Paint Co., Newark, N. J. • Pennsylvania Lacquer Center, Philadelphia, Pa., • R. W. Renton Co., Cleveland, Ohio, Indianapolis, Ind. • Dean & Barry Co., Columbus, Ohio • Vic Minor Co., Toledo, Ohio • Abrasive & Supply Co., Detroit, Mich. • Nelson Industrial Supply Corp., Grand Rapids, Mich. • O'Donahue Sales Co., Milwaukee, Wis. • Paints & Lacquers Inc., Chicago, Ill. • Tanner & Co., Indianapolis, Ind. • Metal Goods Corp., St. Louis, Mo., North Kansas City, Mo., Dallas, Texas, New Orleans, La. • Hubbard & Stau, Los Angeles, Calif • M. E. Smith Co., Los Angeles, Calif. • C & H Supply Co., Seattle, Wash. • Hugh Russel & Sons Ltd., Montreal & Toronto, Canada.

BETTER FINISHES AND COATINGS, INC.
268 Doremus Ave., Newark 5, N. J. • 122 East 7th St., Los Angeles 14, Calif.

fragrance of genuine pure cedar to any ordinary compartment and may be used on finished or unfinished wood, plaster, plaster board, fibre board, paper, etc. Laboratory reports state that the fresh cedar aroma will last for more than one year! The liquid is water white in color, air dries within one hour and is applied by the spray method.

Prevents Fogging on Glass

A new liquid which prevents fogging of glass and transparent plastic in humid atmosphere and at low temperatures, is announced by Master, 4444 Brooklyn Ave., Los Angeles 22, Calif.

"Fog-gone," the new product, has been extensively tested under widely varying conditions and, according to the manufacturer, remains effective for a long period of time at low temperatures. A single application has prevented fogging for more than three weeks.

The new product has a petroleum derivative base and contains silicones among other ingredients. It contains no alcohol or glycerin.

Packaged in a 4-oz. polyethylene plastic "squeeze-spray" bottle, Fog-gone is extremely easy to use. It is necessary to apply only a drop to each eye glass lens or a quick spray to larger glass surfaces and then wipe with clean dry cloth or tissue.

For industrial use, Fog-gone also is available in gallon and half-gallon sizes with separate plastic bottle dispenser.

Multi-Color Finish

Multi-color finish, which makes it possible to apply two or more colors in a single coat, is announced by the United Lacquer Mfg. Corp., 1001 W. Elizabeth Ave., Linden, N.J.

MultaColor's evenly-distributed colors produce an attractive broken surface effect, which is highly attractive on a wide range of products.

Because the new enamel may be applied with good results to porous materials it will prove valuable for attractively and economically finishing various composition boards, wallboards, beaver board and asbestos board, so widely used in home building.

The new finish will be available initially in 16 color combinations, but it may be prepared in an infinite variety of others. Some of the standard combinations are: brown-and-white, tan-and-white, green-white, light blue-dark blue, pink-white, and green-white.

Spray "Cup-Heater"

A "cup-heater" is now available to the finishing industry for spraying heated lacquers and paints. This new unit, the Thermalcup Lacquer Heater, offers the industry accurate temperature control for "hot spray" in small production work. It meets this need in small job shops, in lacquer and paint laboratories for experiment and testing, permits finishing salesmen to demonstrate the spraying of materials at elevated temperatures.

The Thermalcup Lacquer Heater is made of welded aluminum spinnings. A little larger than the standard one-quart spray cup, it weighs only 25-oz., will fit both Bink's and DeVilbiss' spray guns with a yoke cover. Also available are Thermalcups to fit these manufacturers' current pressure guns.

A product of Thermalcup, Inc., Dept. H-31, 10,118 Detroit Ave., Cleveland 2, Ohio.

The Sign of CLINCO Highest Quality

LACQUERS - - -
- - - ENAMELS

Let us help you with
your finishing problems

THE CLINTON COMPANY
1210 Elston Ave., Chicago 22, Illinois

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Wood Finishes

Stains
Fillers
Sealers
Enamels
Undercoats
Topcoat Finishes

Color Cards on Request.
Inquiries Invited.

Standard Coating Corp.
455 Broad Avenue
RIDGEFIELD, N. J.

Salt Fog Test Cabinets

A new illustrated bulletin reveals all details of salt fog and humidity test cabinets offered by Industrial Filter & Pump Mfg. Co., 5900 Ogden Ave., Chicago 50, Ill.

Abrasion Testing Set

Taber Instrument Corp., 108 Goundry St., North Tonawanda, N.Y., offers a free bulletin which describes and illustrates its new Model 140 Standard Abrasion Testing Set. The bulletin consists of six pages 8½x11-in., printed in yellow, brown and black.

"Duranite" Bake Synthetic

A new booklet describing the line of Duranite clear and pigmented synthetic baking finishes has been issued by the Industrial Finishes Department of the Atlas powder Co., Stamford, Conn., and North Chicago, Ill. The booklet also includes data on Duranites for Controlled Temperature Application (CTA).

Complete Finishing Systems Shown in Mahon Catalog

A new 12-page illustrated catalog printed in two colors, explains features of Mahon planning and engineering service, and shows pictures of Mahon equipment and installations in plants manufacturing automotive bodies and other metal products which must be cleaned and given protective and decorative coatings.

Mahon installations include everything —modern equipment for cleaning and conditioning metal surfaces for painting; spray booths, dipping tanks and flow coating setups for applying paint and enamel coatings; filtered air supply systems; ovens for drying metal after cleaning; ovens (gas, oil, electric or steam heated) for baking paint and enamel coatings; and conveyors for moving the work in process through all operations. The equipment and installations are engineered to meet specific requirements.

For a free copy of this attractive and informative catalog, write The R. C. Mahon Co., Detroit 34, Mich., or Chicago, Ill.

Flexible Metal Hose Book

Catalog 500 on flexible metal hose has just been issued by the Atlantic Metal Hose Co., Inc., 123 W. 64th St., New York 23, N. Y.

Attractive Service Emblems

Service emblems—to be worn as lapel buttons by employes of long service with the company—are portrayed in a variety of attractive designs and colors on a new folder being sent out by American Emblem Co., Inc., Ogden Blvd., Utica, N. Y.

Transparent Rust Preventives

Two new transparent rust preventives are discussed in a new 4-page bulletin by Nox-Rust Chemical Corporation. The bulletin, describing Nox-Rust Clear Coat 626 and Clear Coat 607, is available from the manufacturer at 2423 S. Halsted St., Chicago 8, Ill.

Course of Study on Paint, Varnish and Lacquer

A study course in Surface Technology is being conducted at New York University, Division of General Education, 3 Washington Square North, New York 3, N.Y. Evening classes (Wednesday evenings) began Sept. 27 and will continue to Jan. 17.

This course is designed for those who wish to gain a knowledge of the basic principles of the manufacture and use of paint, varnish and lacquer products.

Your Research Problem

What is the function of the chemical consultant in today's industrial research? Foster D. Snell, Inc., gives the answer in a new 20-page brochure entitled, "Research Facilities Without Capital Investment". Aside from illustrations of facilities and equipment, the booklet outlines briefly the relation of equipment and personnel of the consultant, the results to be expected on various types of

problems. This is followed by answers to: "Why use a consultant?", "What is research?" and "What can research buy?".

Copies are available by writing to Foster D. Snell, Inc., 29 West 15th St., New York 11, N.Y.

Safe Cement for Plastics

A technical data sheet describing the uses, properties and merits of Rez-N-Bond, a non-inflammable bonding agent for cementing either acrylics or polystyrene, is now being made available to the plastics industry by Schwartz Chemical Co., Inc., 326 W. 70th St., New York 23, N.Y.

Specification Card for Cleaning, Phosphatizing, Rust-Proofing

Different metals and how to clean them, how to prepare their surfaces for paint coatings and how to protect them from corrosion, etc.—all of this is revealed on a card printed on two sides and distributed free by American Chemical Paint Co., Ambler, Penna.

Enthone Strippers for Organic Finishes

A new 4-page illustrated booklet describing various strippers for removal of synthetic organic coatings from metals including lacquers, enamels, and varnishes. Strippers described include room temperature fast evaporating strippers, emulsion type materials that are mixed with water and are used both at room temperature and heated, and brush-on type strippers.

Write Enthone, Inc., 442 Elm St., New Haven, Conn., Dept. IF, for copy of the booklet.

Brochure on Research Service

With technology, engineering and research so prominent in present-day commerce, a new brochure has been prepared emphasizing the necessity for these technical services. "All Under One Roof" is allustrated with action photographs of jobs both in the laboratory and field. This brochure portrays the work of scientists, engineers, consultants and laboratories at Sam Tour & Co., Inc., 44 Trinity Place, New York 44, N.Y.

It explains the scope of the services available from this independent organization and touches on such subjects as research, process development, product development, production methods, evaluations, expert testimony, investigations, non-destructive testing and inspecting, laboratory testing and analysis.

a Ufinco Product

"Your Seal of Dependability"

Porcelain-Like Baking Enamels

These economical baking enamels dry to a hard, durable finish. One coat on most surfaces is sufficient and in many cases no primer is required. Available in all colors.

Write today for a sample or five gallons at the drum price.

UNITED FINISH COMPANY
established 1921
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Representatives throughout New England

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LACQUERS, ENAMELS
DOPES, THINNERS
Clear Metal Finishes
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Colored Lacquers
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Specialized Production Finishes

PRODUCTS

RANDOLPH PRODUCTS CO.
CARLSTADT, NEW JERSEY

Industrial FINISHING Editorial

Everybody Is Interested in The Finish on Products

Unless a new product has an attractive finish that offers reasonable endurance to service, no one wants it. The general public is becoming better acquainted with the merits of high quality protective coatings on all kinds of products, and now the finish is the first thing that comes in for critical inspection of any new article. Color, luster, texture and decorative technique are carefully appraised by prospective buyers—and by those who are only interested in talking or reporting.

People expect the finish on all new products to be durable too. As a basis for comparison they can point to the finish on their automobiles, household appliances and the furniture and fixtures they see in public places. The finish on these products takes a lot of hard service and abuse, but it retains its protective and decorative qualities for a remarkably long time—for many years or for many decades, depending upon how well the surfaces are shielded from destructive elements and how often they are cleaned and polished.

A well planned program of educational publicity that stimulates the interest of more people everywhere on the subject of good finishes on products, is being directed by the National Paint, Varnish & Lacquer Association, Washington, D. C. The Association's full-page and two-page advertisements have been appearing in several magazines of popular interest and a number of industrial publications, among the latter being Industrial Finishing (see a two-page advertisement elsewhere in this issue). This attractive and informative publicity will continue through 1951.

The Association's slogan, "The Better the Finish, the Better the Buy", is particularly effective. It is easy to say, easy to understand, and it represents sound reasoning. People believe in it. They know from observation and experience that there is no economy in making, selling, buying or using a product that has a finish which is cheap looking or which will not last.

Five little words, "The finish is no good," can quickly ruin the sales and reputation of practically any finished product, especially if there is some basis of fact to substantiate the charge; and once a product has acquired such a reputation it has an almost insurmountable obstacle to overcome to ever regain profitable distribution.

In the Association's publicity campaign many products familiar to everyone are illustrated. For example, in one full-color advertisement that immediately arrests attention, an automobile is shown. One half has a beautiful, lustrous and enduring paint job; the other half, never painted, has a coat of rust that is slowly but surely eating its way through the body metal, to destroy not only the car's good appearance but its usefulness. The heading, ".003 of an inch missing," really tells the story. The finish, which gives every car its smooth lustrous beauty and protects it from the elements and corrosion, was left off half the car. What happened is an impressive reminder to everyone. *(Cont'd on page 102)*

QUALASOLE

AMERICA'S FINEST PADDING LACQUER

Creates new life in wood

- **It is the Modern French polish**
- **Produces a beautiful, rich finish**
- **Can be applied easily with a pad**
- **Quick drying, durable, permanent**
- **Meets present day production demands**
- **No other finish compares with QUALASOLE**

Order a Trial Gallon Can Today!

QUALATONE PRODUCTS INCORPORATED

21 GAY STREET, NEW YORK 14, N. Y.

BOOKS On Finishing Available

"MODERN ORGANIC FINISHES—Their Application to Industrial Products" (452 pages) New	$8.50
"CHEMICAL FORMULARY" (Vol. VIII)	7.00
"FINISHING METAL PRODUCTS"—2nd edition (352 pages)	4.00
"PRACTICAL FURNITURE FINISHING" (112 pages)	1.25
"FURNITURE FINISHING" (543 pages)	4.00
"SPRAY PAINTING"—Industrial and Commercial (169 pages)	2.00
"THE MIXING OF COLORS AND PAINTS" (292 pages)	2.50
"WOOD FINISHING" (361 pages)	2.50
"NATIONAL PAINT DICTIONARY" (704 pages)	7.50
"MODERN POLISHES AND SPECIALTIES" (313 pages)	7.50
"PRACTICAL COLOR SIMPLIFIED" (128 pages)	5.00
"GRAINING"—Ancient and Modern (224 pages)	4.00
"THE SILK SCREEN PRINTING PROCESS" (225 pages)	4.00
"SILK SCREEN METHODS OF REPRODUCTION" (193 pages)	3.00
"THE SCIENCE OF WRINKLE FINISHING" (204 pages)	5.00
"THE SCIENCE OF MODERN WOOD FINISHING" (386 pages)	6.00
"PAINT & VARNISH TECHNOLOGY" (500 pages)	8.00

Cash Must Accompany Order—Send for Descriptive Circular

INDUSTRIAL FINISHING

1142 NORTH MERIDIAN STREET INDIANAPOLIS 4, INDIANA

Tailor-made Finishes

Our long list of standard items may contain exactly what you require. But if not, we'll formulate it for your special process.

Phone — Write — Wire!

STILLE-YOUNG

STILLE-YOUNG
Chicago 14

Manufacturers:
Lacquers
Fillers • Stains
Enamels • Paints

"Wood Graining"

ADDS

Eye Appeal

American Graining Plates are photographic reproductions of fine woods.

AMERICAN RICHWOOD PRODUCTS CO.

Graining Plate Division

104 E. Mason St., Milwaukee 2, Wis.

In another advertisement a young couple is sitting in front of a cocktail table on which rests an ash tray and two glasses of iced drinks. Whether those glasses contain water, soft drinks or something alcoholic, you can feel assured that no white rings will show on the table top later; in fact no harm will come to the finish if the contents of both glasses are spilled over it. The finish on this table top and on many other modern pieces of furniture is waterproof, liquor proof, cosmetic proof and, for all reasonable purposes, mar-proof—a truly remarkable accomplishment, yet one that is now commonplace in the paint, varnish and lacquer industry.

Many of the N.P.V. & L. Association's advertisements also carry a brief message or reminder "For Manufacturers Only". This statement is directed to the management of firms that make products on which protective and decorative coatings are used. Typical copy goes something like this:

"Consult an industrial finishing engineer—one from any reputable manufacturer of finishing materials—and learn how specially engineered finishes can help cut operating costs, lower your break-even point and increase your sales. It has done these things for many of America's foremost manufacturers. It can do them for you.

"This industry has the technical ability to make finishes to suit the specific requirements that you need for your products. Remember, most of your customers *start buying with the finish in mind.*"

The cooperative advertising done by the industry during 1950 has been outstanding, both for the character of the advertisements and the merchandising and publicity programs prepared by the National Paint, Varnish & Lacquer Association and the General Advertising Committee which has directed this effective campaign.

Positive action of BARRETT TYPHOON CENTRIFUGAL WASHERS provides for quick, thorough parts cleansing

In these efficient centrifugal machines the washing solution enters the top of the whirling load under valve control. The operating principle—being that of a typhoon—gives the washing solution a spraying, swirling, and surging action which thoroughly permeates the contents. During this action, centrifugal force creates hydrostatic pressure within the work container. That proportion of the deluge going to the bottom is forced up the side and out carrying off the contaminated fluid.

A thorough, quick cleaning is definitely assured by flowing sequence. Two or more liquids may follow, making it possible to wash, rinse or provide any further treatment as required.

Several Barrett installations involve the use of four machines operated by one man who loads and unloads in three minute cycles. Washing time is only one minute. Another type of set-up provides for recovering oil, washing, drying, and coating with rust-proofing material.

As in all Barrett Centrifugal machines, provision is made for convenience and safety of operation.

Send at once for details of Barrett Typhoon Washer

THE LEON J. BARRETT COMPANY

Designers and Builders of Centrifugal Machinery

1703 GRAFTON ROAD WORCESTER 1, MASS.

Find and Remove Cause of Trouble

No, we don't find perfection anywhere—not even in a well managed finishing room—but this is no excuse for doing nothing to remedy glaring imperfections that result in preventable waste and discomfort during every hour of operation. Some of those things are continually creeping in or trying to creep into every finishing department. If nothing is done promptly to remedy the trouble, eventually everyone concerned becomes accustomed to it and the urge to correct it weakens and gradually disappears.

Recently I looked over a finishing set-up wherein an overhead monorail conveyor moves metal through a washer and rust-proofing machine, a dry-off oven, spray booth and bake oven. Hooks and conveyor chain are covered with a heavy coating of white enamel.

"Do you know of anything that we could use to clean our conveyor chain of enamel and keep it clean?" the finishing foreman asked.

"I have seen conveyor hooks automatically cleaned by passing them through a stripper", I replied, "or sometimes a solvent tank; but this applied mostly to dipping operations rather than to spray painting. I have never seen an entire conveyor chain run through a cleaning tank. How does the chain accumulate so much paint?"

"Too much overspray, I guess", the foreman replied.

This company's 40-ft. spray booth is a water-curtain type, but evidently something is wrong with the exhaust system; perhaps it doesn't have sufficient capacity. The inside of the booth is a virtual fog of overspray. Spray operators are obliged to wear both inhalators and plastic masks. I could

Form-A-Roc • *FIRST COAT*

FOUNDATION FOR FINE FINISH

1. **Dries with lacquer speed.**
2. **Has double lacquer solids at spray gun.**
3. **Fills very well—sands easily.**
4. **Adheres tenaciously to steel, wood, presdwood, aluminum, galvanized metal, etc.**
5. **Holds out lacquer, synthetic or oleoresinous enamels exceptionally well.**
6. **Thins 3:1 with xylol.**
7. **Available in GREY, SALMON and OFF-WHITE.**
8. **Ground well to smooth texture.**

MADE BY

THE VARNISH PRODUCTS COMPANY

5206 Harvard Avenue **Cleveland, Ohio**

readily see why the conveyor chain is so completely covered with a heavy film of white enamel.

Obviously the remedy here would be to study the causes and then make some needed improvement in the exhaust system and perhaps in the methods of spraying or the arrangement of the spray booth. After making these changes the chain could be cleaned and it would not be immediately recoated with excessive overspray.

Truck Decal Signs

A new layout and copy visualizer brochure, designed to simplify the development of Truck Decal Programs is announced by The Meyercord Co., 5323 W. Lake St., Chicago 44, Ill.

The new brochure contains plans for roof decals to attract "above-street-level" audience; decals on the visor area to attract "head-on" attention, and several combinations of side and back decal layouts. Line drawings of all types of truck bodies are shown to give the truck owner complete planning facilities

Red, Orange, Yellow, Gold of Autumn

How beautifully Nature colors the green leaves of trees and shrubbery during the autumn months is always a source of admiration to everyone. Tens of thousands of people make motor trips to view and photograph these beauties of Nature, and artists set up their easels to paint them.

A botanist explains it as the disintegration of chlorophyll in the leaves, caused by colder nights and frost, followed alternately by warm sunshine. This breakdown brings to the surface red and yellow pigments which have been present in the leaves all summer, but which were not visible because of the predominant chlorophyll.

Stolid sugar maples suddenly go stark red. Birches become a flamboyant yellow. Copper, gold, orange, russet — all these join the autumn

pageant as it sweeps across the hills and valleys of every wooded countryside. It is said that nowhere in the world do climate, foliage and forestation combine as perfectly to stage this pageant as in the region between Quebec and the Carolinas—and from the Atlantic to as far west as the Mississippi River.

This same phenomenon influences the colors of many fall textiles. Fabric colors for fall usually include gold, orange, russet, maroon and leaf yellow, as well as the beautiful forest green. And it's just possible that the inclusion of this last is a tribute to the never-changing green of pines, hemlocks and spruces which so steadfastly resist the alchemy of Autumn and the vagaries of all seasons.

These colors are often effectively used by designers of many interior furnishings and of various products that are painted and decorated on a mass production basis in finishing rooms.—*Includes some excerpts from "Dyelines & Bylines," by American Cyanamid.*

Best Thinners More Than Just "Thinners"

You buyers and users of finishing materials—have you ever had a chance to peek into an experienced chemist-formulator's notebook of finishing material formulas? The one he has prepared and actually uses in his day by day work? Probably not.

Well, I happened to be visiting a chemist-formulator who specializes in producing what you might call tailor-made finishes for an important branch of the industrial trade. His formulas for thinner—yes, just thinners—would be a revelation to the average finisher, I believe. Into one thinner, for example, goes four, five or six solvents, each carefully measured in hundredths or even thousandths of a unit of measure, and this proportion is

AMAZINGLY ACCURATE TESTING GAUGE NOW AVAILABLE!

Permits quick measurement of nonmagnetic, coatings of a ferrous surface with an accuracy of ± 5% ± .0001".

Write today for free folder giving full details

FERRO ENAMEL CORPORATION
4155 East 56th Street
Cleveland 5, Ohio

RESTORE PAINT IN 2 MINUTES

PER GALLON WITH MIRACLE BLUE-BOY 5 GALLON PAINT REJUVENATOR

Paints, lacquers and enamel products can be restored to their original consistency without opening the can. Units available to handle from ¼ pint to 50 gallon drums. Immediate delivery.

Originators of paint rejuvenating equipment---sixteen years—thousands of satisfied users.

Write for folder & prices

MIRACLE PAINT REJUVENATOR CO.
127 E. 9th Street St. Paul 1, Minn.

YOUNG BROTHERS OVENS
for baking and drying

Designed and built to produce the finest results in baking processes such as PAINT FINISHING, METAL DECORATING, INSULATION BAKING. Batch or Conveyor Types for any fuel. Write for Bulletin 3.

YOUNG BROTHERS CO.
1835 Columbus Rd. *Estab. 1896* Cleveland 13, O.

Serving **THE SOUTHEAST**

- LACQUERS
- SEALERS
- FILLERS
- TONERS
- GLAZES
- PIGMENTED WIPING STAINS
- NGR STAINS

Complete Technical Service At Your Disposal

SNYDER BROTHERS COMPANY
Manufacturers of Quality INDUSTRIAL LACQUERS
P. O. BOX 548 — TOCCOA, GEORGIA

TOMORROW'S Products Tested TODAY

A service to aid industry in producing longer-lasting and better-looking products. Quick predetermination of durability and permanency by actual exposure test in South Florida. Write us today for full information.

SOUTH FLORIDA TEST SERVICE
EST. 1931
4201 N. W. 7th St. Miami 34, Fla.

carefully maintained in whatever quantities are made up for a specific material used by certain customers.

The chemist-formulator has a clear-cut logical reason for the presence of each and every solvent used in the make-up of his several thinners—and the relative proportion of each and every one of these solvents used. He considers the viscosity of the material to be thinned, the thinned material's formulation and its adaptability to spraying, or dipping, or roller coating, or however it is to be applied; the finishing material's flow-out characteristics, its adhesion to certain surfaces, its flash drying and permanent drying, its smoothness and uniformity of thickness in the resulting film, the ultimate hardness and toughness of the film, and many other things—all more or less affected by the thinner used.

Probably any old cheap thinner or solvent added to your enamel or lacquer will make it thinner—but what else may it do or not do to your final coating? It's something to think about when you are tempted to brush aside your finish manufacturer's recommedations and buy thinners on the basis of what is most easily available at the time, or what is cheapest in price.

To See Decals Better

To permit practical demonstrations of large scale Decal installations, The Meyercord Co., Chicago, decalcomania manufacturer, has adopted three dimensional Stereo-Viewer kits, designed as a visual aid for its sales department.

Each salesman has a light, compact kit containing viewing apparatus and sets of photographic slides, showing, in full color, actual use of Decals on trucks, tank cars, large machinery, and their use as window signs and valances.

The kits are intended to give the customer the additional benefit of actually seeing many types of locations and surfaces where Decals may be used for nameplates, signs, truck lettering and product decoration.

Values of Color in Shops and Offices

For more than ten years the functional and scientific use of color has gone through a period of trial and test in American industry. While most persons will admit that color makes a shop or an office attractive, few have much idea as to what cash savings, if any, are involved.

Here are a few facts released by the Color Research Laboratory of the Sun Chemical Corp., New York. In a government office utilizing business machines, new lighting and a shift in wall colors from buff to pale green brought an increase in human efficiency of 5½%. This production improvement was equivalent to a saving of $139.25 annually per employee. The test was soundly organized and supervised by U. S. Public Health Service.

In the field of safety, a code devised by Faber Birren, color authority, when used in conjunction with an intensive program of safety and first-aid training, lowered the accident frequencies 42% for a large eastern transit system. Here the computed annual saving per employe was $13.22.

W. W. Spray Booth Service

Dearborn Chemical Co., 310 S. Michigan Ave., Chicago 4, Ill., announces a new service and an improved line of products for treating water used in water wash or down-draft spray booths. This service provides an entirely new approach to the problem of protecting spray booth recirculating systems and exhaust fans against clogging caused by paint overspray.

Dearborn, through technically trained staff of Water Treating Engineers strategically located throughout the U.S., will make a survey for any plant using water wash spray booths or planning to install them. Based upon the paint or paints used in the booth and an analysis of the water supply where necessary, Dearborn will recommend a specific formula which, when properly used, will provide complete protection for the exhaust system and the recirculating pump. These improved formulas will also permit more efficient reclamation of the paint overspray.

ODDS ARE 2 TO 1

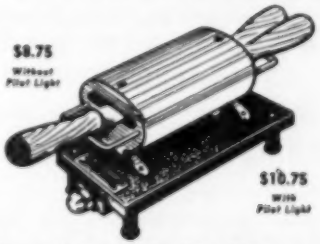
You'll get a cleaner surface with the improved DETROIT HANDY "TAC" RAG. Standard of your FINISHING INDUSTRY for 16 years. Removes all particles of dust, lint and sand. Non-inflammable! Order from your supplier today, or send for sample.

DETROIT HANDY "TAC" RAG

DETRO MFG. & SALES CO., INC., CULVER CITY, CALIF.

No String Tied To This—

If You Use OP-AL



Patching Knife Heater

STANDARD FOR OVER 25 YEARS

Sold By All Leading Jobbers

OPAL THE OP-AL ELECTRIC AND MANUFACTURING COMPANY

809 N. SENATE AVE. - INDIANAPOLIS 7, IND.

Phone: Lincoln 6250

INFRA-RED OVENS (Lamped or Lampless)
Individually engineered in stationary, conveyorized, portable or special designs
Manufactured by
THE MISKELLA Infra-Red COMPANY
Main office: 7305 Grand Ave., Cleveland 4, Ohio

Write for Catalog of
Paint Testing Apparatus
GARDNER LABORATORY
Bethesda 14, Md.

WHITE OVERSPRAY
We are interested in obtaining adequate supplies of this normally waste product. If interested in selling your supply PLEASE WRITE:
The JACROY Company
Krick & Forbes Roads, BEDFORD, OHIO

To Prevent Paint From Skinning Over

★ While paint manufacturers have, to a great extent, reduced the tendency of industrial paints to form skins, this condition still occurs, especially with air-drying materials where more driers are used to aid in the oxidation of the oils.

Since the skinning action is accelerated by the presence of air, there are some common sense suggestions that will assist in eliminating skin formation.

All containers in which paints are stored should be kept air tight.

Dipping tank, when not in use, should be covered, preferably with oil-sealed or water-sealed covers. Where such covers are not feasible and when paint must be kept in open containers or dip tanks for considerable periods of time (a few hours or a day) in between coating operations it is suggested that you cover the paint with a small amount of the thinner that is regularly used with the paint. If in doubt as to which thinner should be used, consult your paint supplier. — *Louis E. Martin, Paint Chemist.*

★ *Guest Editorial*

Jeffrey Stewart Receives Appointment From Navy

Upon completion of a research project at Raritan Arsenal, located at the Army's Ordnance Depot, Metuchen, N.J., Jeffrey R. Stewart has been transferred to the Bureau of Yards and Docks, Department of the Navy, Washington 25 D.C. Mr. Stewart previously spent six months preparing a technical manual for the Department of the Army, entitled, "Cleaning, Preserving, Sealing and Related Materials". The publication will go on sale at the Government Printing Office upon completion of printing and binding.

Mr. Stewart is also author of the National Paint Dictionary (third edition) which enjoys a circulation of 3500 copies. The next edition of his book, which is now in preparation, is scheduled for publication in 1953. Mr. Stewart is also remembered by many paint technologists through the seven years he was associated with Dr. Henry A. Gardner, as a research chemist with the National Paint, Varnish & Lacquer Association.

R. V. King with Jones-Dabney in Pacific Northwest

The Resin & Grinding Liquids Division of The Jones-Dabney Co., Louisville, Ky., announces the appointment of R.V. King as sales representative in the San Francisco and Pacific Northwest areas. Mr. King has been engaged in the paint industry on the West Coast, in a technical capacity, for several years.

Mr. C. J. Meyers is the Resin Division representative in Los Angeles.

Chadeloid and New Wrinkle Add Men in Midwest and East

Chadeloid Corporation and New Wrinkle, Inc., announce the addition of Mr. Russel D. Hamilton and Mr. George A. Conrad to their technical-sales staffs. Mr. Hamilton will be in Chicago and travel the midwest including Minnesota, Wisconsin, Illinois, Michigan, Indiana, Kentucky, Eastern Missouri and Western Ohio. He has had sales-service and formulating experience over the past 22 years and will be available to licensees at all times for technical assistance.

Mr. Conrad will have his headquarters at Lyndhurst, New Jersey and contact New Wrinkle and Chadeloid manufacturing licensees in the east from Boston to Atlanta. He has had long prior experience in the wood finishing and industrial finish fields, particularly in the New York-Philadelphia area.

Free Book: Protective Linings for Steel Containers

Linings for steel drums and pails to protect a wide variety of products during shipment and temporary storage are described in a 12-page booklet entitled "The Inside Story of Protective Linings for Steel Containers", issued by The Glidden Co., 11001 Madison Ave., Cleveland 2, Ohio.

The booklet describes protective linings manufactured by The Glidden Company for drums and pails for packaging animal and vegetable oils and fatty acids, products of oil refiners, strong solvents, food products, and miscellaneous products, including soaps, stains, water-thinned paints, resins, paint and varnish removers, formaldehyde, and various acids.

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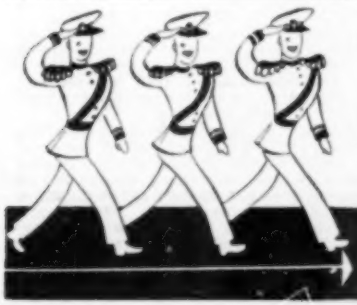

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Harold R. Tanney Elected V. P. of Monroe Sander Corp.

At a meeting held on Wednesday, Sept 13, the Board of Directors of The Monroe Sander Corporation of Long Island City, manufacturer of industrial finishes, synthetics and chemicals, elected Harold R. Tanney vice president in charge of production.

Mr. Tanney, formerly assistant treasurer, is now in complete charge of the manufacture of all company products for consumer and government use.

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POSITION WANTED.

Lab. technician: Four years' experience roller coating development and control. Fair spray man. Factory production: Pebble mill (250 gal.), stone and small roller mills. Some shading. Family. Age 43. Prefer midwest. Address IF-762, care Industrial Finishing.

POSITION WANTED.

Finishing room foreman with 20 years' experience in all phases of organic finishing on all surfaces. Considerable knowledge of paint formulations, laboratory control of materials and finished products, production methods, equipment, estimates and cost analysis. Can handle personnel and has estimable executive ability. Seeking employment with company which seeks improvement and reduction of cost in finishing department. Address IF-763, care Industrial Finishing.

FINISHING FOREMAN WANTED.

Factory making mahogany occasional tables requires experienced foreman capable of producing fine finish and handling colored help. Factory employs 100 people located in south central large city. Wonderful opportunity for right man. Reply giving qualifications, age and references. Address IF-767, care Industrial Finishing.

FINISHING ROOM FOREMAN WANTED

By large midwestern furniture manufacturer. Must be fully experienced in finish room practices, volume production of dining room furniture and capable of taking full charge of department. Salary to suit qualifications of the right man. Permanent position. Write full details. Address IF-765, care Industrial Finishing.

FINISHING FOREMAN WANTED.

Desire experienced man, capable of taking complete charge of finishing department in midwest factory producing bedroom furniture. Write, giving complete details, background, experience. Address IF-766, care Industrial Finishing.

FOREMAN FINISHER WANTED.

A large manufacturer of radio and television cabinets located in Ontario, Canada, has an opening for an expert finisher. Applicants must have technical and practical knowledge of all phases of finishing. Must be capable of supervising 175 men, meeting schedules with high quality finishing. The salary will be commensurate with ability to produce quality work on schedule. Do not apply unless you can meet above qualifications. In reply give details of education, experience and references. Address IF-764, care Industrial Finishing.

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Who are now calling on furniture trade, to sell new Silicone-Base furniture polish. This is a proven product now in use by leading Grand Rapids furniture manufacturers. Write TONE MFG. CO., 710 Monroe, N.W., Grand Rapids, Mich.

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Experienced man for New England area, to handle our industrial lacquers and synthetic enamels on commission plus drawing basis. Completely organized laboratory and factory. Our products are well-known and established in this area. Write giving complete details. Address IF-768, care Industrial Finishing.

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Save machine time, solvent, money. We buy your waste degreaser solvent or reclaim it for you. QUEEN CHEMICAL Co., 93 Georgia Ave., Brooklyn. HY 8-8120.

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One recently overhauled 10-h.p., 2-cylinder V-type Worthington Compressor, 60-lbs. pressure with steel base and tank. One Binks spray booth 8x10x7. One Binks spray booth 4x4x7. BAKERS' SANI-GLAZE, INC., 30 E. Rittenhouse St., Philadelphia 44, Penna.

FOR SALE.

215-gal. Glidden No. 72 Coca Cola yellow flat paint; 80-gal. Glidden No. 91 Red flat case paint; 25-gal. Glidden No. 2 flat purple paint; 20-gal. Sherwin-Williams No. 65804 orange case enamel. All packaged in 5's, $2.25 gal. F.O.B. Brockway, Pa. Net for cash before shipment. Subject prior sale. Contact Fred Stewart, BROCKWAY GLASS CO., Inc., Brockway, Penna.

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Buffalo 16, New York

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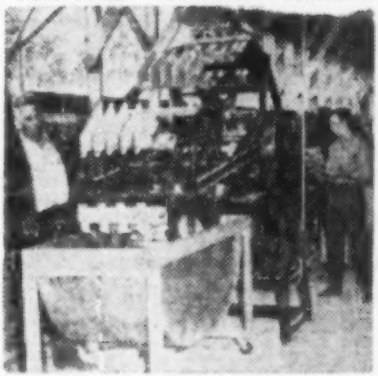

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Contains 18 chapters, with interesting illustrations. Information in "The Science of Modern Wood Finishing" is based on the latest materials, equipment, supplies and methods used in modern factories today. Many articles published in INDUSTRIAL FINISHING Magazine are referred to in the bibliography.

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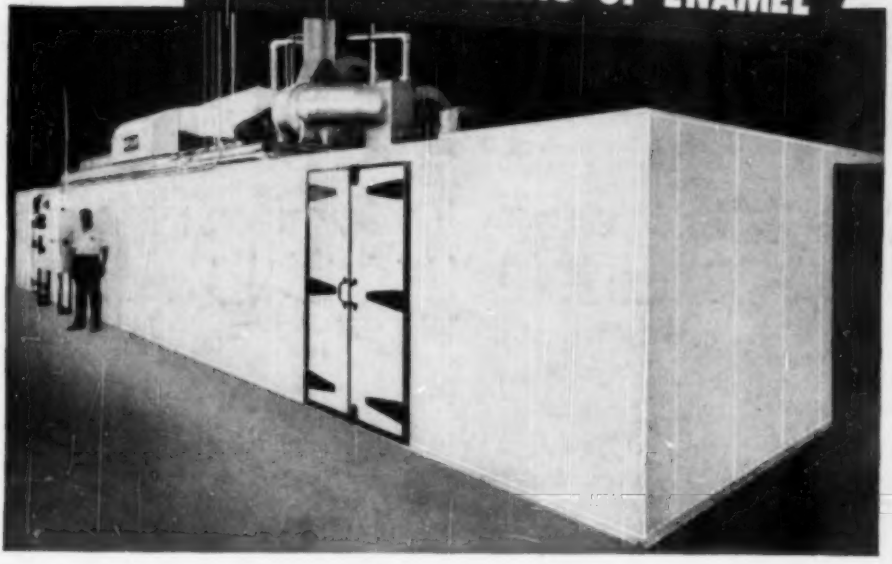

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